MARCH 1952

American Engineer

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IN THIS ISSUE . . .

How To Prepare For An Engineering Executive Position

Practical Advice From Three Leading Executives

1952
ENGINEERING LIBRARY

What can be done to rise to the top in the engineering profession?

. . . and these two articles about the profession

PHOTO STORY
Mr. King's Miniature Motors

Unity Group Issues Report; NSPE Dissents
—"Must" Reading For Every Engineer—

. . . and five additional features for and about professional engineers

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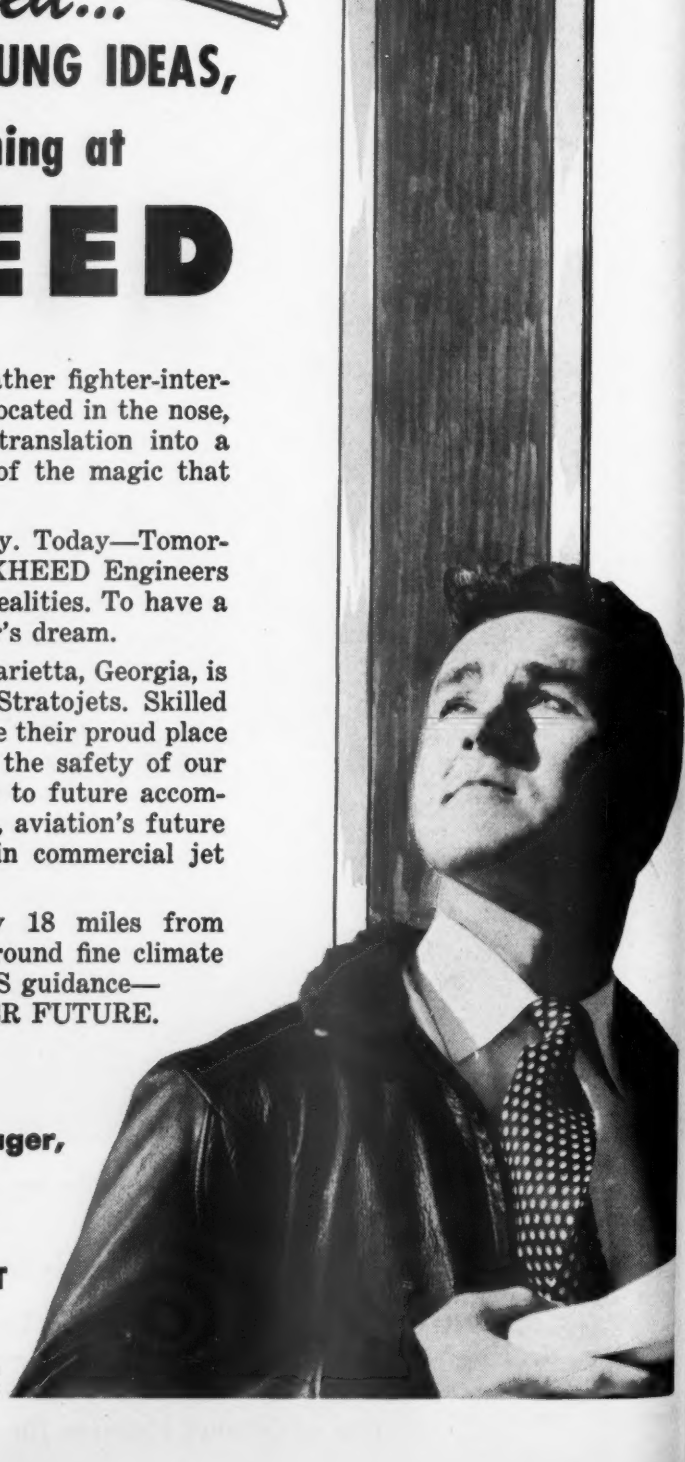

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Letters

Good News . . .

Dear Editor:

Have just finished reading your February issue of the AMERICAN ENGINEER. It then occurred to me to make a comparison with one of the issues of a few years ago.

My congratulations to you and your staff. Very well done.

L. E. EASLEY,
National Director,
Indiana SPE,
Indianapolis, Indiana.

Dear Editor:

Congratulations on another fine issue in the January AMERICAN ENGINEER. . . . An anticipating great interest throughout the country on the NSPE second questionnaire and Executive Research Survey. . . .

A. O. HOISTAD, P. E.
St. Paul, Minnesota.

Answer: Better Pay . . .

Dear Editor:

The gentleman writing to the editor has made an excellent point in the December issue, that the law of supply and demand still exists. Certainly no shortage of engineers exists so long as there are qualified engineers working for less than $10,000 per year.

Our economy pays semi-skilled laborers $50.00 to $100.00 per week for non-creative, non-responsible work. Ridiculously enough, many people expect that they should be able to hire college-trained and experienced engineers for the same or slightly greater salary.

Because it is not possible now to hire all the well-qualified engineers wanted at laborer's wages, it is felt by some people that there is a "terribly awful" shortage of engineers.

I suggest that the NSPE encourage the following: (1) The raising of the average pay of engineers to approximate 2½ times that of a semi-skilled laborer, let us say to approximately $5.00 or $6.00 per hour. (2) Encourage and educate industry to *really* utilize engineers. Utilize them where their skill, knowledge, and judgment is effectively used to a high degree.

(Name withheld by request).

Taxes . . .

Dear Editor:

I very much like the way you handle the AMERICAN ENGINEER. Your articles are informative.

I have just reviewed the phamplet "How To Prepare Your U. S. Tax Return," on Form 1040 for 1951. On page 7, under "Business or Profession," lawyers and doctors can make certain deductions as expense. Why is the Professional Engineer so excluded? Are we not equally important to our way of life? Some pretty important individuals think so. . . .

EARL F. DUNKLE P. E.,
Kansas City, Mo.

Firm Name Error . . .

Dear Editor:

My attention has been directed to your Article entitled, "Blue Print for Success as a Consulting Engineer," as contained in the January 1952 Issue of the AMERICAN ENGINEER. As a former engineering associate and partner of Major Ezra B. Whitman for a period of twenty-nine years, it appears to be desirable to correct an inadvertent error with respect to the Engineering Firm organized in 1925. At that time, the partnership of Whitman, Requardt and Smith was formed for the practice of engineering. This Firm with offices in Baltimore, Maryland and Albany, New York, engaged in the engineering assignments as described in the Article and the partnership was supsequently dissolved as of December 31, 1943. The Baltimore Office of this Organization has continued the practice of engineering under the Firm name of Whitman, Requardt and Associates and the staff of the former Albany Office is now operating under the Firm name of Benjamin L. Smith & Associates.

The associates and clients of these Engineering Firms through this period, can attest to the outstanding accomplishments and ability of Major Whitman.

BENJAMIN L. SMITH, P. E.,
Benjamin L. Smith & Associates,
Albany, N. Y.

► **The American Engineer is pleased to print Engineer Smith's letter calling attention to the error contained in the "Blueprint" piece.—*The Editor.***

Correction . . .

Dear Editor:

We of the Lafayette Chapter of the Indiana Society of Professional Engineers were pleased to read the report of our State Convention as given in the current issue of AMERICAN ENGINEER but we regret to find an unfortunate omission in listing the speakers.

Dr. Frank C. Hockema vice-president of Purdue, gave the opening address "Engineering For Tomorrow." This was regarded so favorably by all who were present that it was suggested it be reprinted in full in the December number of the INDIANA PROFESSIONAL ENGINEER.

Dean Hockema is a member of our local chapter and has done a great deal to enhance the prestige of the Society here and throughout the State.

B. B. LEWIS, P. E.,
President, Lafayette Chapter,
Indiana SPE,
Lafayette, Indiana.

► **The American Engineer sincerely regrets the error in the Indiana story. —*The Editor.***

Dear Editor:

I believe there is a very definite need of an organization in the engineering profession to study and give a reliable, unbiased, report on the engineering and economic feasibility of large engineering projects. There is too much unreliable information given on these projects, such as appeared in a letter to the editor in the October issue of the AMERICAN ENGINEER.

This letter, under the heading, "Pork," by Mr. George E. Remp, P. E. of Gainesville, Fla., attacks the Central Arizona Project, and uses very inaccurate and unreliable information. I would like to use some of the statements made to illustrate how engineers can be misled, if they do not have time to search into the facts on such projects.

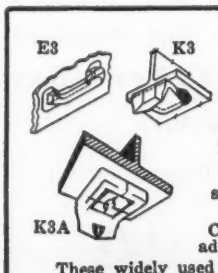
Mr. Remp stated: "Just think of it, $700,000,000 to provide irrigation at $1,800 per acre for land worth 300 per acre to produce more crop surpluses to be subsidized.

In the first place, the $788,000,000 cost includes the electric power production costs. Only one third of the total power generated will be used to pump the irrigation water, the balance of over three million kwh will be available for sale. Most of the crops produced are of the specialized type that can be grown in very limited areas, and are not subsidized.

Other statements made such as the benefit to the few, that it will pay no capital costs and 37/100ths of 1% of interest, indicate Mr. Remp has obtained his information from some very unreliable sources. If he is concerned about this investment being paid back he should look at the record. Arizona has paid 97% of the money borrowed from the government for its projects.

If the engineering profession had an organization to analyze the report on these projects, engineers would not be misled as Mr. Remp apparently has been. Impartial analysis would not only be important to the engineer, but would be a great service to Congress when these projects come up for consideration.

R .E. REINBOLD, P. E.,
Phoenix, Arizona.



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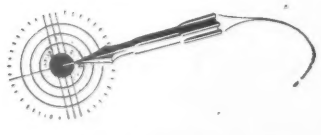

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American Engineer

MARCH
1952

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Leland I. Doan, President of the Dow Chemical Company, quoted in Nation's Business.

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•

David A. Heller,
Staff Writer

•

Arthur F. Beck,
Business Manager

•

George J. Nicastro,
Chairman, Publications
Committee, NSPE

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How to Prepare for an Executive Position . . 6
Three leading engineer-executives give practical suggestions on how to "get ahead" in the profession. You'll find much of value here.

Mr. King's Minature Motors 8
A picture-story on the famous King Collection of model motors in the Edison Institute Museum.

Engineers' Week, 1952 11
A preliminary "round-up" of activities across the nation during Engineers' Week.

Unity Group Issues Report; NSPE Dissents 14
This subject is of vital concern to every professional engineer.

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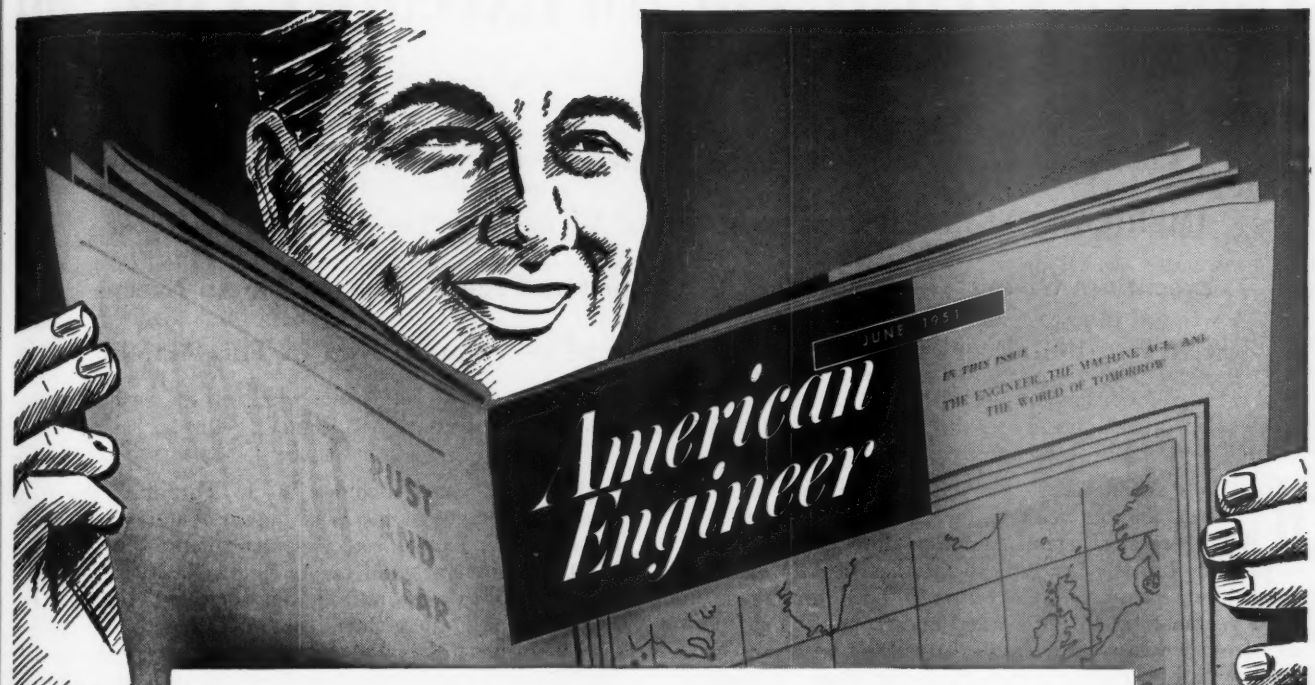

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American Engineer

How To Prepare For An Executive Position

Continuing Its Series of Self-help Articles for the Ambitious Engineer, THE AMERICAN ENGINEER Presents Practical Advice from Three Leading Engineer-executives Giving Their Views on How One Can Prepare Himself for An Executive Position. Every Reader Will Find Material of Value to Him in This Article.

How does an engineer gain the prestige and financial rewards that go with being an engineer-executive? What practical steps can the alert engineer take to prepare himself for an executive position when the chance comes along? Are executives "born" or "made"?

To get answers to these questions from the only persons from whom such answers can validly be given, THE AMERICAN ENGINEER queried three prominent engineer-executives. They were requested to tell our readers, candidly and without reservation, and to use examples from their own careers, "how one gets ahead in the engineering profession."

Our guest panel includes W. L. Thrailkill, Assistant General Manager of the Washington Water Power Company; Walter Evans, Vice President of the Westinghouse Electric Company; and E. A. Holbrook, 1941-42 President of NSPE, now retired, but formerly Assistant Director of the United States Bureau of Mines.

Asked what the requisites for an engineer-executive are, Mr. Evans, Vice President of Westinghouse, replied:

"Five special attributes appear to mark the successful engineer-executives:

1. An ability to express himself clearly and well.

2. Normal curiosity regarding economics, finance, law, psychology, and other non-engineering subjects.

3. A willingness to make the logical and reasonable compromise with perfection which day-to-day business requires.

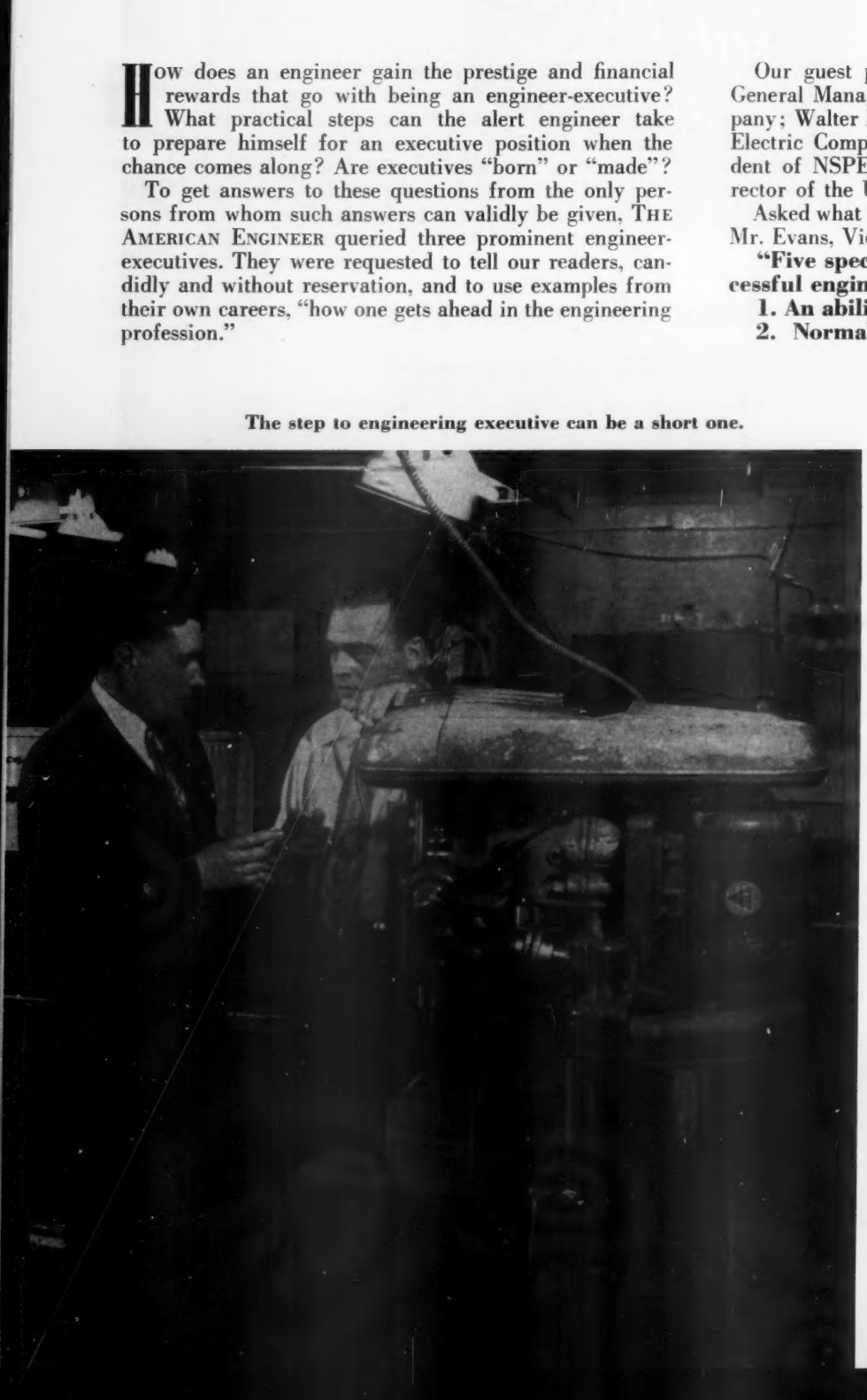
4. A ready understanding that income must exceed outlay.

5. An ability to get along with contemporaries and at least to understand competitors.

"Unless one can express his views and opinions to others, he is of little worth as an engineer or as an administrator. Today's executives must maintain a constant contact with financiers, who provide their plants and credits; suppliers, who provide raw materials; engineers, who design their products; labor, which builds the products; the sales force; and finally the customer to whom they must look for the profit which enables them to continue in business. Unless their contacts with each of these groups are in mutually understandable language, their jobs are not well done.

"Broad collateral knowledge is essential to any engineer who aspires to management posts. He must learn why people buy one product and ignore another; understand the market trends and analyses; know the whys and wherefores of finance; become familiar with elementary business law; observe labor trends and management reaction.

The step to engineering executive can be a short one.



"Engineers are inclined by nature to be perfectionists. Every engineer is sure that his fine handiwork of today can be made even finer tomorrow, and it is amazing how often he is right. *But the wise business executive recognizes that industry must produce goods—not just design them—if it is to prosper, and production is impossible if designs are changed from day to day.* Thus, he realizes that practical operation must make the logical reasonable compromises with perfection which make possible continuous profitable operation. The successful engineer-turned-executive realizes that there is a sharp and irreconcilable difference between competitive production demands and the creation of a single model shop unit. Production requires, for example, a design which can be made at the lowest cost consistent with satisfactory quality. It calls for connections and adjustments easy to get at and simple to operate. It requires the fewest possible parts and the simplest assembly plan. It is this 'know how' which frequently means the difference between red or black ink.

"IT is the basic 'facts of competitive life' which the practical administrator never overlooks.

"*Each of the foregoing characteristics is essential to management success, but there is another without which all others are lost. This magic key to successful administration is ability to get along with people. This ability to cooperate with one's contemporaries influences every human relationship and is responsible more than anything else for the success or failure of a business executive.*

"I firmly believe that the engineer is tomorrow's executive. We know that some engineers make good administrators. The problem, to me, seems to be: why aren't there more engineers in executive posts, and what can we do about it?

"The answer to the why question, I believe, lies deep-rooted in the personal traits of character necessary for a man to be an engineer; and in turn, in his training, his choice of employment, and in the general environment which these things produce.

"An engineer's training—an orderly scientific approach to a given problem—gives the engineer a sound foundation for management responsibilities. If he adds the special attributes mentioned earlier, he becomes eminently qualified for broader responsibilities.

"However, by its very nature, engineering attracts individuals who seem to find this broadening effort difficult. Engineering students frequently are people of precise mental habits. Their intense interest in their chosen field produces a marked tendency toward clannishness.

"Development of complex formulae or completion of hundreds of long, drawn out experiments leave little time for outside interests. Engineers deal in exact sciences. Two lines bisected in the same way produce the same angle today . . . yesterday . . . tomorrow—and the engineer is inclined to develop his personality in the same ordered perfection.

"Formerly top-level executives usually came from two professions—bankers or lawyers. Few came from the ranks of engineers because of the dearth of engineers with the broad interest and experience required.

"Banker-trained executives contributed an ability to translate the need for new or expanding plant facilities into language which prompted financiers to extend credits; a particular skill in working out tangled financial details with customers; a knowledge of foreign trade and exchange; and a highly valuable capacity for handling hundreds of other matters beyond the scope or training of engineers of that era.

"Choice of attorneys for top management posts had a sharp rise as business became hedged 'round more and more by regulations, and as its tax burdens mounted.

"WITH mass production the engineer came into his own. As industry became more complex, the engineer who understood what was happening joined the lawyers and bankers in administrative positions, because industry had new problems which only the engineer could solve.

"To most engineers this was a difficult and distasteful task because they were unprepared by training—and usually by temperament as well—for this dealing *with people* . . . rather than *with things*. Engineers must broaden their training and outlook."

The second commentator on NSPE's "How to become an Engineering Executive" panel is W. L. Thrailkill, a member of the Engineers' Conference Board for Industry. and holder of a position of tremendous responsibility as Assistant General Manager of the Washington Water Power Company.

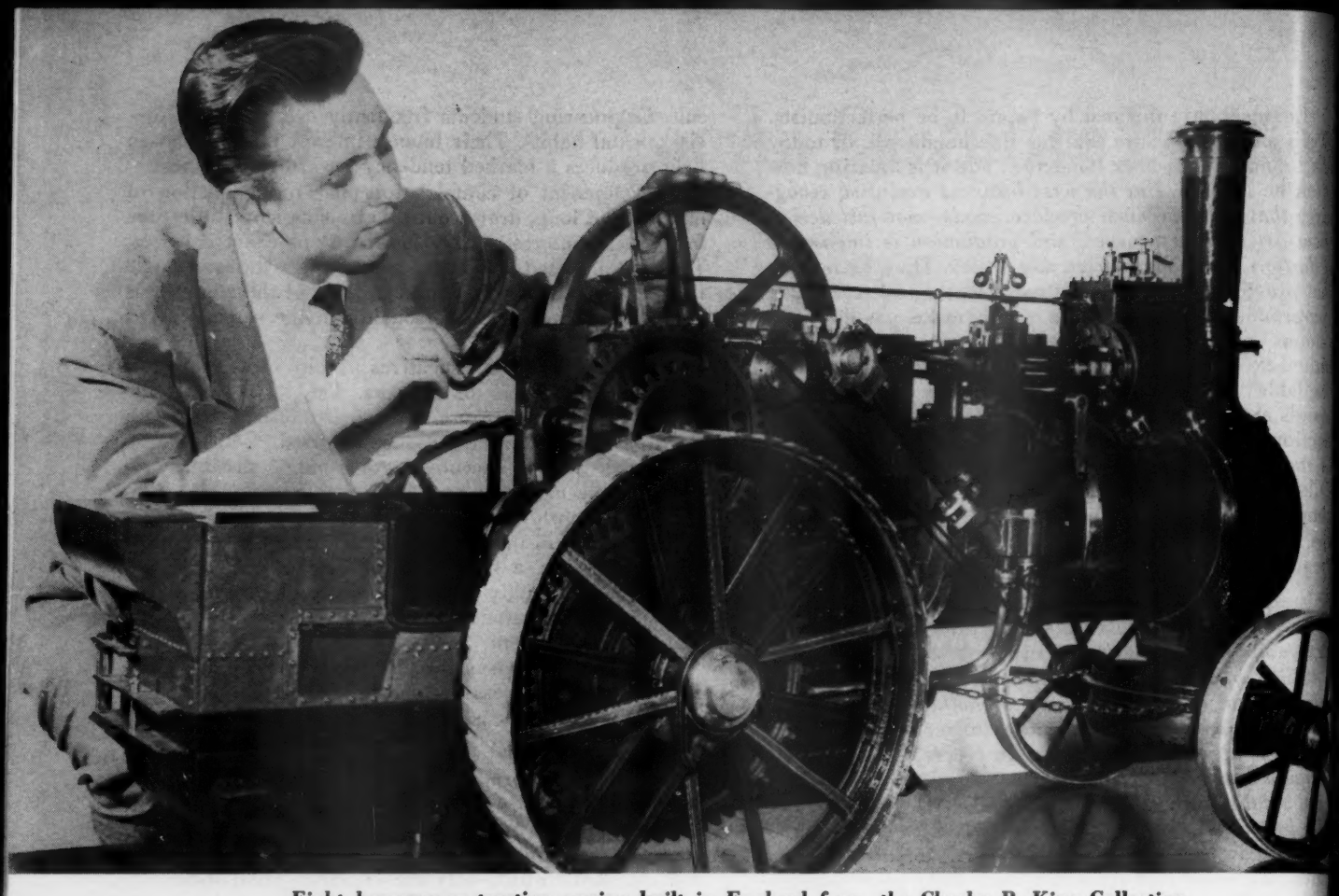
Mr. Thrailkill, despite a sense of modesty apparent in his comments, has had a brilliant career. THE AMERICAN

(*Continued on page* 28)

What Kind of An Engineering Executive Would You Make?

Here is a check-list of do's and dont's for the professional engineer who has an executive position in mind:

Do	*Don't*
1. Learn how to express yourself clearly and well.	**1. Get so close to engineering that you forget about the importance of economics, finance, law, psychology, etc.**
2. Develop busness ability; a firm must make money	**2. Forget that production and sales are as important as design**
3. Learn the "facts of competitive life"	**3. Wait too long to develop yourself; youth is the age to learn**
4. Learn about people—why do they act and think the way they do	**4. Believe that "introvertism" is fatal; it is very often cured**
5. Become a "joiner"	



Eight horsepower traction engine built in England from the Charles B. King Collection.

MR. KING'S MINIATURE MOTORS

WAY back in 1896, an ambitious young engineer was introduced to Inventor Thomas Alva Edison. Edison's name was already a household word all over the world, but few had ever heard of the ambitious young man. At the time, he was chief engineer for the Edison Illuminating Company of Detroit. The young man too, it seemed, was an inventor. He puttered around with gasoline engines to the annoyance of his wife and parents.

The young engineer told Edison of his engines. The famous inventor praised him and predicted that he would go far. He did. His name was Henry Ford.

That's how Thomas Edison and Henry Ford began a life-long friendship. The telling of the story of their acquaintanceship is a necessary prelude to explaining about the Edison Institute Museum and the King Collection of model engines it contains.

Ford, in gratitude for Edison's encouragement and in admiration of his deeds, was moved to found Detroit's famous Edison Institute and Greenfield Village in honor of his friend.

As every resident of the Motor City knows, the Edison Institute is one of the truly great scientific exhibition places in America. Its collection of antique autos, many of them having belonged to Presidents, its exhibition of Edison relics, early Americana and scientific milestones would take a book to describe even partially.

However, the model engines belonging to Engineer Charles Brady King, member of the Automotive Hall of Fame and holder of more than 40 patents on gas engines, auto parts, railroad equipment and electrical devices are especially interesting.

THE AMERICAN ENGINEER believes that a picture is wo worth the proverbial ten thousand words, so we won't tr to describe the engines. The picture display shown will t that, but some of the facts about Mr. King's career are in teresting enough to warrant the attention of AMERICA ENGINEER readers.

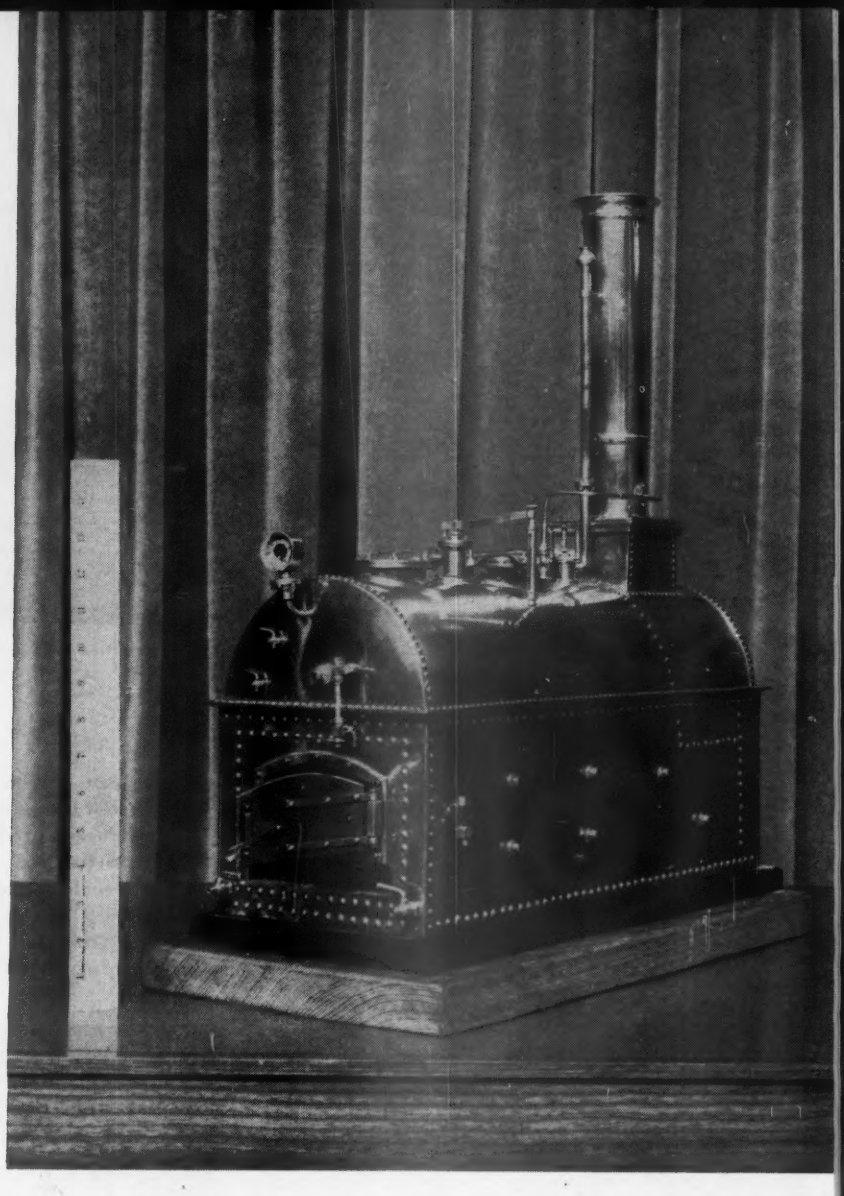
One of the pioneers of the automobile industry, Mr. Kin invented his first "horseless carriage" in 1896. As a re sult, tales of his troubles with the police are still legendar around Detroit. The guardians of the law took a dim view of Mr. King's efforts and ordered him to keep his automobile off the public streets after 6 A.M. They also forbade him to drive his "contraption" more than 5 m.p.h. so as not to frighten pedestrians or horses.

In 1887, he had entered Cornell University seeking an engineering degree, but had left two years later upon the death of his father. Returning to Detroit, he worked as a draftsman for the Michigan Car Company. (In those days, "car" meant railroad car.)

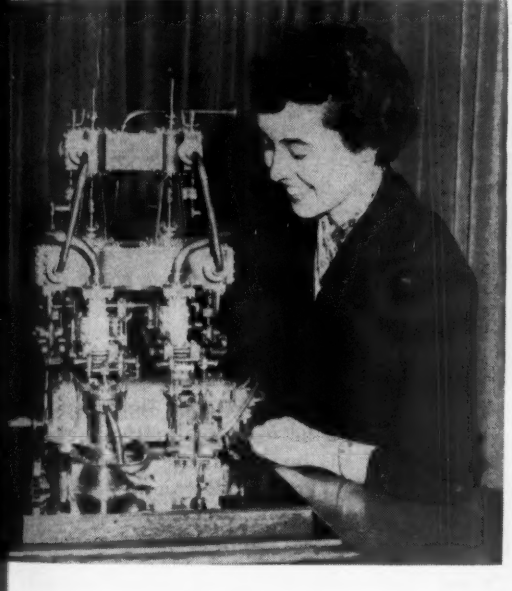
A few years later, as an employee of the Russell Wheel and Foundry Company he was in charge of the firm's exhibit at the Transportation Building of the Chicago World's Fair of 1893. Entering two patents of his own in the exhibition, Mr. King won a diploma and a medal for one of them, a new-type pneumatic hammer.

Upon his return to Detroit, he organized his own company to manufacture the pneumatic hammer and a series of gasoline engines. It was at about this time that his experiments attracted the attention of another struggling engineer-inventor, Henry Ford, and the two conducted

(Above) model of Marine Steeple Compound Condensing Engine built in Geneva, N. Y. in 1892 shows kind of engine used on early lake steamers.



(Above) model steam boiler used on river steamers of this country for decades. Built in England about 1860.



many experiments together in the Ford kitchen, to the extreme annoyance of Mrs. Ford, who feared that the baby, Edsel, would be poisoned with fumes from the various experimental gasoline engines.

In 1908, Mr. King went abroad for two years to study automotive design and returned to organize the King Motor Company in 1910. The company introduced the first cars on the market which offered left hand steering, center control gear shift and cantilever springs. Mr. King dissolved the company in 1912 and sold his patents to General Motors and other companies.

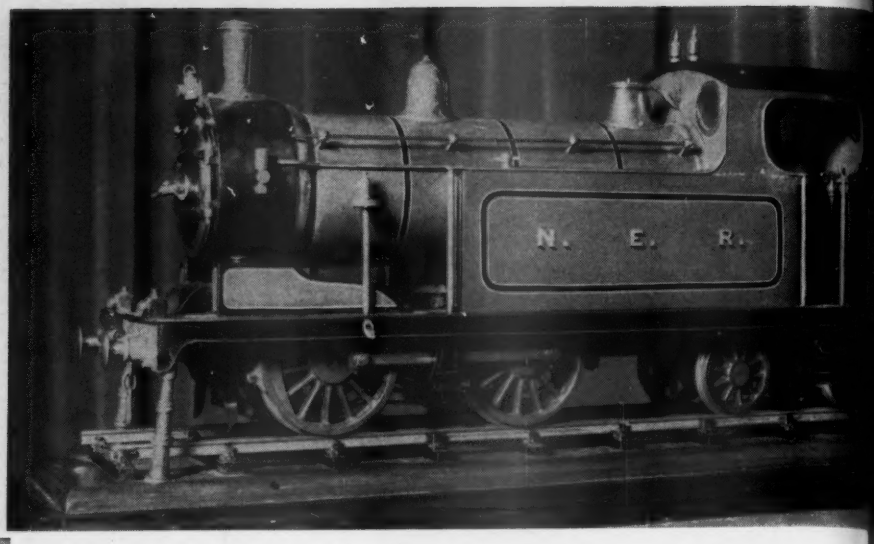
During World War I, he rendered great help to America's air war effort by serving as head of the Army Signal Corps' Division of Aviation Engine Design.

For more than forty years, Mr. King was vitally interested in miniature engines. His collection of them, depicting all significant advances in steam engine design since the 18th century, attracted nation-wide attention. He donated them to the Edison Institute last year.

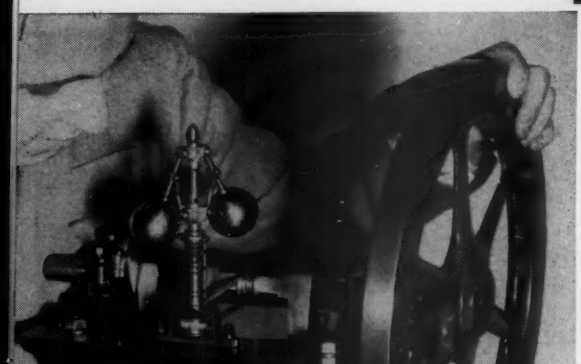
(Continued on Next Page)

(Left) model of Tandem Compound Steeple Marine Condensing Engine contains over 1,000 parts. Engine was in use about 1900. *(Below)* model of Great Northern Railway Passenger locomotive.

(Right) Model of the County of North Hampton British Railroad Engine ▶



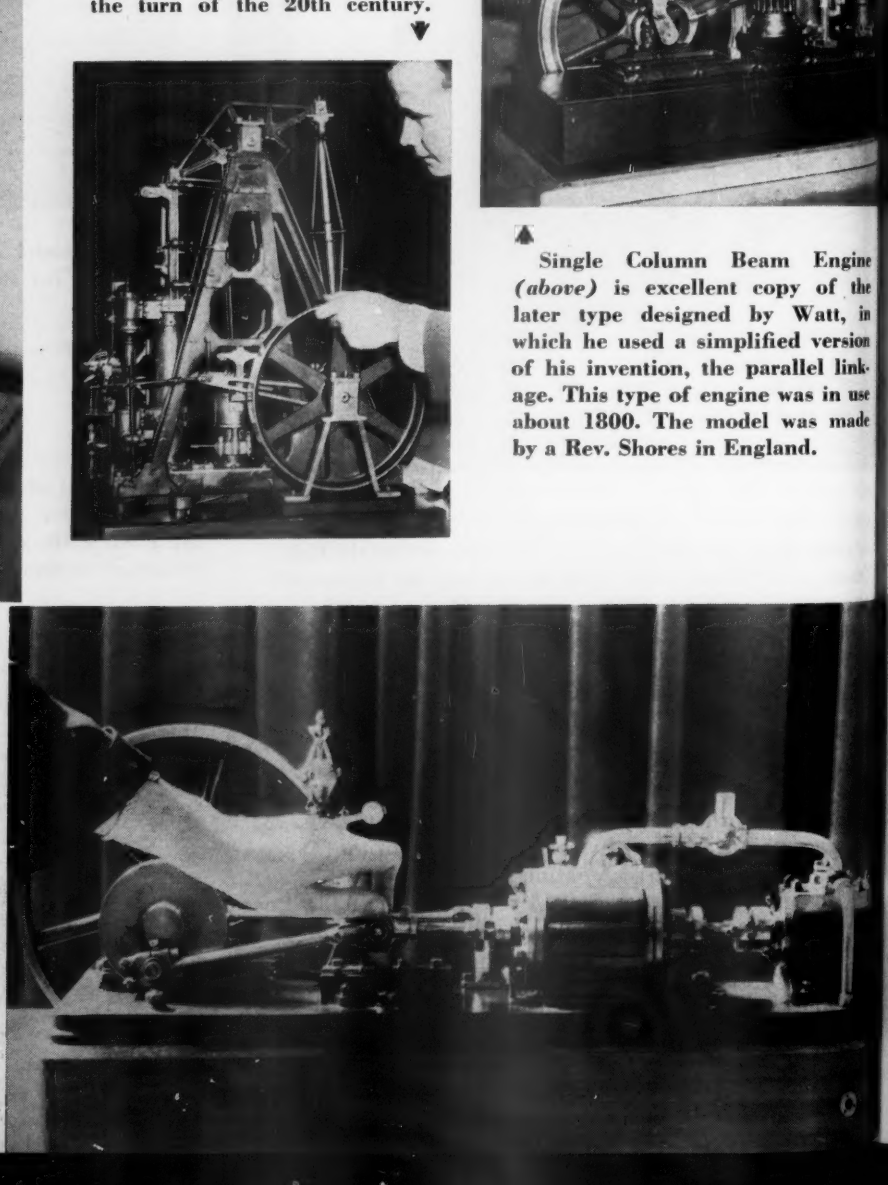
Inverted Table Engine model *(below)* was made in England about 1850. It has only one cylinder but two connecting rods and cranks. ▼



American Marine Beam Engine *(below)* was completed by Max Swickel of Jersey City and represents five years' work. It is an exact scale model of type of engine used on early American steamers from the Civil War to the turn of the 20th century. ▼

▲ Single Column Beam Engine *(above)* is excellent copy of the later type designed by Watt, in which he used a simplified version of his invention, the parallel linkage. This type of engine was in use about 1800. The model was made by a Rev. Shores in England.

Model of single cylinder horizontal condensing engine was built in Carlisle, England, in 1890. Engines of this type were used in 1870's and later. ▶



All photos courtesy of the Edison Institute Museum.

New York lost little time in getting official proclamation. In the photo on the left: Gov. Dewey signs proclamation. Present are, l. to r.: Charles B. Molineaux, President, NYSSPE; John B. Walsh, Chairman, Public Relations Committee, NYSSPE; Governor Thomas E. Dewey; Maurice J. Roses, Vice-President, Albany Chapter, NYSSPE; Charles H. Derby, President, Albany Chapter, NYSSPE; Russell A. Wylie, Chairman, Albany Chapter Public Relations Committee, NYSSPE. Photo on Right: Mayor Vincent Impellitteri (left) shakes hands with Carl M. Gilt, vice president of the NYSSPE after proclaiming Engineers' Week.

NBC, CBS, Leading Publications, Tie-in National & Local Engineers' Week Promotion

On Sunday night, February 17th, 1952, Benjamin F. Fairless, President of U. S. Steel, and himself an engineer, opened his company's celebration of Engineers' Week on the firm's NBC program, *Theater Guild on the Air* with this message: "And in addition to the financial rewards, there is the greatest award of all, the realization of accomplishment. Engineering by its very nature is constructive. It builds things and cities and countries and tomorrows. And as each new job is completed it opens the way to still other fields and still other horizons. It takes courage and strength and vision to open those fields and open those horizons."

With this opening of National Engineers' Week by one of the nation's greatest organizations, a design of telling the public about the profession was set that was to be followed by the major networks throughout the week of George Washington's birthday. Besides messages on such outstanding shows as *Theater Guild on the Air* and TV's *Studio One*, the major networks lauded the engineer daily through dozens of station breaks.

But the printed word was to come in for its share of attention, too. The American Bridge Company's special ad commemorating National Engineers' Week appeared in such magazines as *Civil Engineering* and *Engineering News-Record*. The Grumman Aviation ad appeared in such widely read journals as *U. S. News and World Report* and *Newsweek magazine*. Also appearing in *Time* and *Newsweek* magazines was an ad by the Koppers Company drawing attention to the work of modern professional engineers.

In many sectional journals and house organs throughout the country, material supplied by the national office of NSPE was given space. The Martin *Star*, external house organ of the huge Glenn L. Martin Company, devoted a full page to National Engineers' Week. Early reports have also brought to the attention of this magazine, an Engineers' Week message in the General Electric *News*, and a Koppers Company journal.

Until more complete reports from the NSPE's local

Above: Members of the Texas Society of Professional Engineers gather around Gov. Allen Shivers, as he signs proclamation. Left to right are: Wallace M. Driskell, Jr., Exec. Sec., TSPE; J. Neils Thompson, 1st Vice-Pres., TSPE; Henry Harkleread, TSPE Member; John D. Miller, Chairman, Budget & Finance Comm., TSPE; Trigg Twichell, 1948 Past President, TSPE; Percy Pennybacker, State Director, Travis Chapter, TSPE; and Phil Ferguson, President, Travis Chapter, TSPE. Below: Governor Okey L. Patteson signs proclamation on Engineers' Week in West Virginia. Looking on as the proclamation is signed is W. O. McCluskey, Jr., of Wheeling, president of the West Virginia Society of Professional Engineers.

In this picture Charles Henderson, Mayor of Youngstown, Ohio, is signing a proclamation of Engineers' Week in Youngstown while Francis A. Reilly, President of the Mahoning Valley Society of Professional Engineers, OSPE, looks on.

states and chapters are in, the vastness of the publicity job can best be measured by the amount of material that was requested from headquarters. Here are some of the items that helped tell the nation of National Engineers' Week:

1. Three thousand copies of a specially designed poster was distributed to NSPE units.

2. More than fifty thousand specially designed seals for application on mail and other similar items, were distributed to the states and chapters.

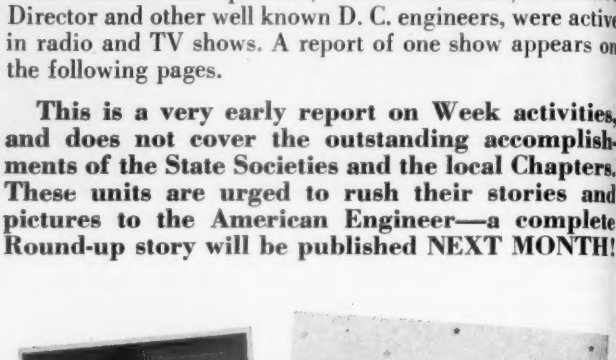
3. Seven hundred National Engineers' Week promotional kits containing more than 20 promotional aids were distributed to Engineers' Week chairmen throughout the country.

4. Thousands of radio spot announcements were sent to radio and television stations along with hundreds of feature stories on Engineers' Week. Newspapers and radio stations made good use of this material on their public service time and early reports show exceptionally good coverage. One newspaper promotional item of note is the use by King Features (one of the country's leading newspaper syndicates) of a story on Engineers' Week and NSPE that went to *one-thousand* subscribers of the service.

It should be noted that many leading officials of the Society were active. Nearly every member of the Executive Committee had speaking engagements and it is reported that President L. L. Dresser appeared on radio and TV shows in Tulsa, Oklahoma, while immediate Past President Sidney L. Stolte addressed the College of Engineering Convocation, University of North Dakota, at Grand Forks.

At National headquarters, Paul H. Robbins, Executive Director and other well known D. C. engineers, were active in radio and TV shows. A report of one show appears on the following pages.

This is a very early report on Week activities, and does not cover the outstanding accomplishments of the State Societies and the local Chapters. These units are urged to rush their stories and pictures to the American Engineer—a complete Round-up story will be published NEXT MONTH!



Above: Two of the special Week ads that appeared in National publications.

"Liberty Speaks" Features Engineers' Week

In commemoration of Engineers' Week, the Liberty Broadcasting System devoted a half hour program to the contributions of engineers and engineering to our way of life. Mr. Karl Bates, moderator of Liberty's panel-type forum, *Liberty Speaks*, devoted his program on Sunday, February 17, to a discussion of "This Engineered World of Ours."

Four members of the National Society of Professional Engineers took part with Mr. Bates in the discussion. They are: M. Allen Pond, Assistant Chief Engineer of the United States Public Health Service, Perry Ford, Chief of Engineering Services of the Office of Civilian Defense, Professor Russell B. Allen, head of the civil engineering department of the University of Maryland, and Paul H. Robbins, Executive Director, National Society of Professional Engineers.

The broadcast was aired by more than 400 stations all over the nation. As a service to its readers, THE AMERICAN ENGINEER prints a much-condensed version of the broadcast.

Mr. Bates: Good evening. It may surprise you, ladies and gentlemen, as much as it did me to learn that almost everything we eat and wear and do is touched by engineering. Even such things as processed blood plasma, penicillin and the so-called wonder drugs would not be possible without engineering. We have four members of the National Society of Professional Engineers with us tonight to discuss "This Engineered World of Ours."

First of all, gentlemen, I'd like to know exactly what Engineers' Week is.

Mr. Ford: Engineers' Week has been set aside by many public officials to focus public attention on the fact that we are living in an engineering age and to bring out some of the contributions of the engineer.

Mr. Bates: Professor Allen, can you tell me why this certain week has been set aside as Engineers' Week?

Prof. Allen: Engineers' Week was purposely picked to

coincide with the birthdate of our first President, George Washington, who was himself an accomplished engineer.

Mr. Robbins: I would like to point out that there will be celebrations in more than 300 communities throughout our nation. Most of our listeners will have occasion to hear more of Engineers' Week before it is over.

Mr. Bates: It is my understanding that the life expectancy of the average person has risen from 59.7 years in 1927 to 67.6 years today. Mr. Pond, as an expert in public health matters, can you tell me what role the engineer has played in giving all of us a longer life?

Mr. Pond: By improving the public water supply, by removing the sources of disease and by improving the public milk supply and helping to control insect disease carriers, the engineer has done much to improve public health.

Mr. Bates: I have heard the term *registered, professional* engineer used frequently. What is a *registered* engineer, and why should the public care whether an engineer is registered or not?

Mr. Robbins: In any profession there are certain qualifications necessary to adequately perform the duties associated with that calling. Legislatures have felt it desirable to set up such qualifications for designation as a professional engineer. In most states these require graduation from an accredited engineering school, plus a stated amount of responsible engineering experience.

Mr. Bates: What is the situation with regard to our supply of engineers?

Mr. Robbins: We have an unprecedented situation in the demand for engineers. This has developed due to changes in our economy, higher standards of living, our defense effort and a large increase in our national population. Foreign aid and Point Four, too, are adding to the creation of an unprecedented demand for engineers.

Mr. Bates: What is being done to take care of this shortage?

Prof. Allen: It will probably be with us for at least a decade. We can encourage more *qualified* students to take engineering. We can also make better use of the engineers we have. High school students must be encouraged to take more science and mathematics courses. Our reservoir of potential engineering students would thus be increased.

Mr. Pond: The shortage of sanitary engineers is particularly bad. Last year less than 250 engineering students graduated in this field. The demand, domestically, and from the foreign field, far exceeded the supply. Vast parts of the world are still subject to the hazards of diseases such as amoebic dysentary and the malaria mosquito. There is little hope of promoting the welfare of these nations until engineering is able to give them freedom from disease.

Mr. Bates: Switching to the field of civil defense, what are some of the things engineering can do to save American lives in case we are forced into World War III?

Mr. Ford: Engineers must take the lead in corralling the implements necessary to save life in the event of catastrophe such as sabotage or bombing. Engineering cuts across all phases of civil defense work.

Mr. Pond: During the disastrous floods in the Kansas and Missouri River valleys last summer, the major public health problems involved were the interruption of the public water supply and the lack of proper sewage disposal The work the Civilian Defense Administration is doing in training engineers for disaster relief work is of major importance.

Mr. Robbins: One of the important things in disaster preparation is that we must not wait for the disaster to happen before we begin to plan for it. These things must be planned in advance. Engineers are taking the initiative in making this planning effective.

Mr. Ford: Inventories of all available engineering equipment are being made for each locality in this country. These determine the support area for each target area. We must also have the engineering manpower necessary to put these facilities to proper use ready.

Mr. Bates: Mr. Charles E. Wilson, chief of Defense Mobilization, recently said in his Fourth Quarterly Report to the President that our first B-47 Superbomber required nearly three and a half million engineering man hours. He contrasted this with the B-17, which, he said, required only 85,000 engineering man hours. What is the significance of this for our defense effort?

Prof. Allen: That is indicative of the increasing need for engineering manpower, not only for war, but also for peace. Years ago there was only one engineer for every 600 factory workers, now there is one for every 60 workers. Our civilization just demands more engineers as it has become more complex and as our standard of living has risen.

Mr. Robbins: This is particularly true in the armed forces where a great deal of our fighting equipment is highly mechanized, complicated, and requires a great deal of engineering in its preparation, maintenance and operation.

During the broadcast. L. to r.: Karl Bates, moderator; Paul H. Robbins, Ex. Director, NSPE; Prof. Russel B. Allen, U. of Maryland; Perry Ford, Office of CD; and M. Allen Pond, US Public Health Service.

Mr. Bates: I know that engineering greatly affects our food supply. How are some of the ways it does so?

Mr. Pond: Raising food for America and the world is an enormously complex operation. The Bureau of Reclamation, for instance, has, over a long period of time, improved most of the lands lying West of the Mississippi. A completely different engineering problem relates to the manufacture of foodstuffs.

Mr. Robbins: Getting food to the communities and individuals who will use it is another problem. The fact, for example, that we now have strawberries all year around is a tribute to engineering in the frozen food industry.

Mr. Bates: What does the average citizen have reason to expect that engineering will do for him in the future?

Mr. Ford: In my opinion, the next 25 years will see the revelation of more things than have been hertofore been revealed in all history.

Engineers' Week Stories

States and Chapters are asked to get in their Engineers' Week stories to the AE as soon as possible. Special features will be used in forthcoming issues—make certain *your* group is represented.

Unity Group Issues Report; NSPE Dissents

MEMBERS of NSPE have been watching with considerable interest the considerations of the Exploratory Group of fifteen of the major engineering societies studying increased unity of the engineering profession. On December 15, 1951, this group met in New York City and took the following actions:

"1. That the attached report be approved as the most feasible proposal for inaugurating greater unity of the profession which the Exploratory Group has been able to devise after months of consideration.

"2. That the report be transmitted to E.J.C. and to the constituent societies of the Exploratory Group.

"3. That E.J.C. and the constituent societies of the Exploratory Group be requested to inform the Secretary of the Exploratory Group of the actions which they take on these recommendations, and the Secretary be directed to report these actions to all members of the Exploratory Group.

"4. That the Exploratory Group expresses to E.J.C. its appreciation of their statesmanship in inviting the constituent societies to form the Exploratory Group and meet under its auspices, and its thanks to the A.S.C.E. and other engineering societies for providing meeting rooms and secretarial assistance."

Mr. Alex Van Praag, Jr., NSPE representative, recorded his vote in opposition to the first two of these actions (see opposite page), stating that he wished to be recorded as opposing the launching of a unity organization before approval of the proposed plan had been expressed by a substantial majority of the societies involved and of their members.

The report referred to above opened with an introductory historical statement reviewing the considerations of the Exploratory Group and presented the following general conclusions:

"1. It is desirable that the engineering profession establish a 'unity organization' which will be able to advance the unity of the profession and the service of the profession to the nation.

"2. The unity organization should be formed by the modification and development of a present organization or by the integration of two or more present organizations rather than by the establishment of an entirely new organization.

"3. The unity organization should initially include the participation of a majority of the national engineering societies represented in the Exploratory Group.

"4. There are a number of important questions regarding the form and activities of the unity organization and its relation to other engineering bodies on which there are differences of opinion within the profession. Accordingly, it is desirable that the unity organization be launched in the simplest possible way and that these questions be studied and determined by the unity organization itself rather than by the Exploratory Group or any other temporary group.

"5. To bring about this first simple step the Exploratory Group recommends to Engineers' Joint Council that it invite all constituent societies represented in the Exploratory Group to become constituent societies of the Council.

"6. The Exploratory Group recommends further that, coincident with this invitation, Engineers' Joint Council modify Article II—'Membership' of its Constitution in such a way as to provide for membership on the Council by representatives of the constituent societies appointed or elected for the purpose, and to provide for a number of representatives from each society, ranging from one to three. This recommendation is developed in more detail in Section B of this report.

"7. The Exploratory Group recommends to the constituent societies of the Group that they accept the invitation of E.J.C. and become constituent societies of that body.

"8. Following these first steps, the Exploratory Group recommends that the enlarged Engineers' Joint Council give further study to the matters discussed in Sections C, D and E of this report and take appropriate action on each of these matters."

The Exploratory Group having previously agreed on the objectives for the unity organization (*see "American Engineer," February, 1951*), the report outlined the following scope of activities:

"The scope of activities of the unity organization will, of course, at all times be determined by the desires of its members. It is recommended that the constituent societies recognize the unity organization as the major organ for cooperative work between them. However, this does not require the constituent societies to give up any of their present activities or their cooperation through other channels except as and when they find this to be desirable.

"Within its field of activity the unity organization should deal directly with government agencies and with others as a representative of the engineering profession.

"The unity organization should have its own staff, in order to fulfill successfully the responsibilities which the constituent societies will wish to entrust to it."

Recognizing that there are yet questions unresolved, the report continued:

"The Exploratory Group regards the following matters of paramount importance for determination if a unity organization is to be established on an adequate basis and to function successfully. Therefore, it is recommended that in the invitation of E.J.C. to additional societies to affiliate with the Council, it be indicated that the following matters will be placed before the expanded E.J.C. for prompt consideration.

"Membership—National Engineering Societies

"Since the unity organization is intended to represent all engineers, it is desirable that the constitution include a statement of the standards to be met by a national engineering society to make it eligible for consideration for membership.

"Requirements for membership are now stated in Article II, Section 3 of the E.J.C. Constitution. It is recommended, however, that consideration be given to revising this so that the qualification would depend upon:

"1. The professional qualifications as engineers of the members of the society.

"2. Minimum size of membership as a qualification for voting membership in the unity organization.

"Membership—Regional Societies and Councils

"The Exploratory Group believes that affiliation with the unity organization of regional, state and local engineers' societies and councils is important for the organization fully to carry out its responsibilities as a general representative of the engineering pro-

(*Continued on page* 27)

NSPE Believes That the report of the Exploratory Group for Greater Unity in the Engineering Profession Does Not Resolve Several Items Essential for a Successful Unity Organization

MR. Alex Van Pragg, Jr., NSPE representative on the Exploratory Group, in outlining reasons for his objection to presenting a report at this time, requested that the following statement emphasizing basic positions taken by NSPE in the Group meetings, be included as part of that Group's report.

General Statement

Any recommendation for a unity organization for the engineering profession should have the support of a large majority of the engineer members represented by the participating societies. This direct expression from engineer members of our profession has only been accomplished to date in a small area of the profession.

Discussion and cooperative efforts should, therefore, be continued to educate every professional engineer in this country in the details involved in a unity organization before attempting a conclusion on the type of unity organization to be recommended.

The non-endorsement of even a single large group should be overcome before a unity organization is decided upon.

Major Items not yet Resolved

If and when a specific plan is proposed and recommended, that specific plan ought to first have resolved many of the important problems which are yet left quite vague or undetermined. The discussions of the Exploratory Group have not been concerned to date with solving all the problems which are recognized as problems of magnitude. Such procedure was entirely proper, but if a specific plan is to be recommended at this time, such specific plan must first have resolved important issues involving both principle and detail. There are a number of overlapping objectives and services between the proposed unity organization and several societies now represented in the Exploratory Group. Societies thus affected will be rightly concerned as to the effect the unity organization will have on their activities.

Individual Membership

The deliberations of the Exploratory Group over a period of more than two years have shown a majority of the members as preferring a unity organization based upon a democratic individual participation-type of membership. This appears to be fundamental to a unity organization of a type that will long endure. The December 1950 report of the Exploratory Group clearly provided that:

"Provisions should be made for the membership of individuals in the unity organization. Such members should pay individual dues to the unity organization."

This declaration was one of the agreed principles to be inherent in the unity organization. Adoption of the present proposed report does not provide for this previous determination and declaration of policy. The adoption of the present report then is quite inconsistent with the determination to provide for individual membership participation.

Authority for Action

The authority for action on the part of the unity organization must be clearly defined. Unless the unity organization is given authority to act on behalf of the enginering profession, with provision made for a binding decision to be reached by democratic processes, support for this decision not being optional with the participating societies, a unity organization cannot be successful or enduring. The unity organization must be given final and complete authority to act on behalf of the profession. There cannot be a system of participation or non-participation at the choice of each of the participating societies, either in support of the policies or the financing of the unity organization. If one or more major societies withdraws from the council, what happens to the organization or, more important, the unity in the profession?

Organization Beyond National Level

To be successful, the unity organization must be organized on a three-level basis or at least at other than the national level only. It is evident that the unity organization must have grass roots representation if it is to be effective. The problems of the profession are such that there must be coordination and liaison for all problems of the engineer which exist at state and local, as well as the national level. For example, legislation and government representation, agreed to be a principal interest of the unity organization, is affected by action at individual, local, state and national levels.

Financing

The extent and manner of financing the national unity organization and its activities should be fully resolved before a specific plan is recommended. An intelligent vote on the adoption of a final plan demands an adequate prior determination of the principles and extent of the financing. Such is not provided in the proposed report.

Conclusions

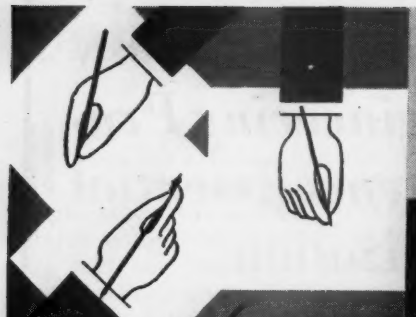
With the above expression of certain principles and policies which, in turn, have not been resolved to date in the deliberations of the Exploratory Group, many believe that recommendation for a unity organization at this time is immature.

Elements of the profession should be encouraged to publicize and discuss through all means available to their respective societies the need for and the objectives of a unity organization upon which there seems to be no difference of opinion.

The subject should be pursued until there is developed a plan which will be acceptable not only to the executive direction of the participating societies, but to a large majority of their individual members.

It is urged that no specific plan be fostered until first there shall be further discussions and education of the profession, and second a polled expression of opinion from members of the profession on which to base further implementation of the unity organization.

Thereafter, it would be appropriate, and only then, for the Exploratory Group to develop details for the unity organization and to recommend the adoption of a specific plan.



Professional POSTSCRIPTS

This is your department. Your contributions to it are solicited. We want your views on subjects that affect the engineering profession directly or indirectly. Please keep your contributions short, and remember that editing may be necessary to conserve space. Your name may be omitted if you desire. — *The Editor.*

Greetings. As you are probably aware, this is the first appearance of our new feature. We have long felt the need for space in the magazine that could adequately take care of the many excellent contributions we receive — we hope *Professional Postscripts* will suffice. Don't feel this is a formal undertaking that requires writing worthy of the best, or that it requires writing at all. If you prefer, simply send us editorials or news clippings that appeal to you and that have a message for your professional brothers. What we are trying to say is that this is *your* department, *your* soap box, so use it.

Here is our keynoter. He is

Engineer Edward G. Lowell,
Altadena, California

and he is concerned about the engineer shortage. Let's hear from Engineer Lowell who recognizes that not everything is in short supply today—he says there is one great surplus: articles on the shortage of engineers. But he claims most of them have two things in common — they are not written by engineers and they are based on conditions over a very short period. But here is Engineer Lowell, commenting first on the much discussed Lessing articles on the shortage appearing in *Fortune* magazine.

"To begin, Mr. Lessing's 'fact sheet' was indeed 'shocking.' His two chief figures, a current shortage of 60,000 engineers and an additional annual requirement for 30,000 were not substantiated. If they be guides to the future, they should be at least somewhat applicable to the past. Let's look. For ten years prior to World War II, graduating classes averaged only 11,000 annually. Furthermore, during the decade some 50,000 under the age of 35 left the profession, apart from deaths and retirement. Yet engineers who looked for jobs during that period found few shortages.

"But things have changed — wartime developments, expanding economy, organized research. Industry now has an insatiable appetite for engineers. Really? How about the fall of 1949 and the spring of 1950. For those who don't make a living at engineering, let us refresh your memories.

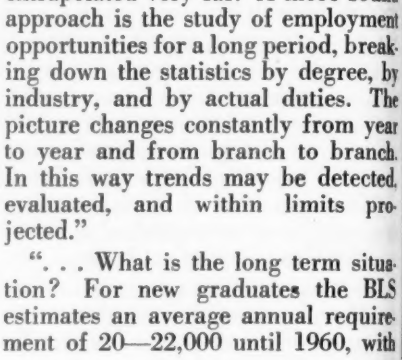
"There were plenty of engineers walking the streets as recently as March of 1950. In New Jersey, one major engineering company began laying off its 250 man force in July 1949, and eventually got down to less than 100 in 1950. A central New Jersey chemical company laid off every one of the 13 engineers in its new construction-department.

"Engineers were plentiful in Tulsa, Oklahoma after Jones and Laughlin Supply Co. closed its engineering division in November, 1949. One well-integrated California firm doing engineering, construction, and fabrication, employed 510 engineers in September, 1948. It kept only 260 by February, 1950. Today it has 550 and is looking for more.

"In general, engineers find most of their work in the expanding economy. They are concerned with new construction, new equipment, new processes, and new products. According to the Bureau of Labor Statistics, about half of all engineers do design, development and applied research, which most companies regard as overhead. Many of the remainder in management and production are in industries which supply equipment and material for capital improvements. With slack times this work is the first to be cut. Production will be kept up if at all possible, sales promotion even increased, but *expansion* is quickly forgotten. With any retrenchment, the engineers are the first to be laid off.

"The result is that employment for engineers is highly cyclical, the peaks and valleys are more extreme than in other fields. Never, except in national emergencies, has demand for engineers exceeded the supply. Thus no short term situation, no matter how well investigated, can be accurately extrapolated very far. A more sound approach is the study of employment opportunities for a long period, breaking down the statistics by degree, by industry, and by actual duties. The picture changes constantly from year to year and from branch to branch. In this way trends may be detected, evaluated, and within limits projected."

". . . What is the long term situation? For new graduates the BLS estimates an average annual requirement of 20—22,000 until 1960, with



the supply after 1954 about equal. There will continue, however, to be one significant shortage not mentioned in the propaganda now being circulated. There are two few really experienced men. Mr. Lessing states that two to four years is needed to register a new graduate in the profession. Very few get enough responsible experience even in four years to qualify. A skilled engineer capable of leadership and responsibility needs at least ten years. In some more difficult lines such as process engineering 15 or 20. The shortage of such men goes back to the discouraging thirties when thousands of engineers were forced to seek a living otherwise. Even today qualified engineers are forsaking engineering for better remuneration in business. Engineers strangely

enough are subject to the same economic stimulus as the rest of the nation."

The Problem—Short Term

". . . Since all the current long term estimates are based on the present demand, let's scrutinize it. Are there really 60,000 engineers desperately needed now, or is this an educated guess? The situation seems similar to that in automobiles in September, 1948. When it appeared that no one could get a new car, everyone had in three or four orders. When supply approached demand in October, there were many cancellations.

"That there is presently a good demand for engineers is certainly true. But how much of this is real and how much artificial? The recent boom in employment is due chiefly to two factors. Government and AEC construction of terrific proportions. Favorable tax benefits for most other construction. Every company with plans for future expansion is attempting to charge as much of it as possible to today's big taxable profits.

"As stated before, this is where a large proportion of all engineers find employment. It may take 200 engineers to design and build a refinery—20 to run it. Present warplane output is quite low, but the aircraft industry has hordes of engineers designing prototypes and means of production. Now Government defense spending has so far been largely for capital-equipment. When this program is substantially complete and when the rapid write-off of private construction is restricted, the current demand for engineers will diminish considerably.

"To add to the real need there is an artificial one caused by three malpractices in the use of engineers. First of these is *hoarding*. Mindful of conditions in World War II, many employers have sought to build up their engineering staffs against the day when military manpower - requirements would again be large. Then there is *skimming the cream*. Most big operating companies like to choose with care. They will hire ten or more new graduates for every one they expect to have ten years hence. Finally we have *substitution of more critical materials*, which practice makes the others economically painless. There are other manpower shortages — technicians, draftsmen, engineering clerks, and expediters. Young engineers learn fast and can handle most of these jobs quickly. Some companies will attract men to sub-professional work with high pay, often better than some bonafide engineering jobs."

Well, thank you Engineer Lowell. That's your opinion and we think you have p r e s e n t e d some thoughtful points. By the way, Engineer Lowell ends up his piece with these words:

"If industry really wants more engineers, it will get them in the long run only by making the work steadier and more attractive."

O.K. Do you agree? Let us know.

Paging Dale Carnegie . . .

Several months ago we published an article on How Important Is Personality To the Engineer? (December, '51). We were somewhat afraid that the story dealt with a subject a bit too timeworn to be appealing, but the response we got told us our fears were unfounded. That's why we have gone ahead and published another personality piece in this issue—we hope you enjoy it. But now, what *do* our readers think about this subject of engineers and winning friends?

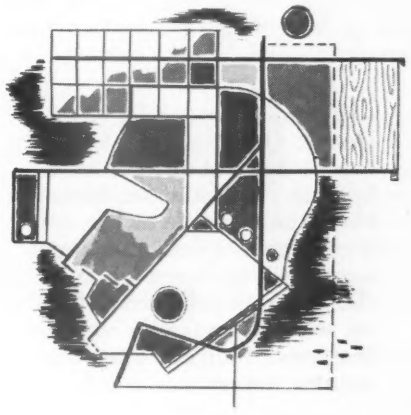
If you remember, the December issue quoted the industrial psychologist Dr. Henry C. Link and asked prominent engineer readers to comment upon it. Dr. Link said: "So far as it affects security, a good personality is more important than a good mind."

Bearing this statement in mind let's turn to our next contribuor. He is
Engineer Robert E. Derby,
President,
Albert C. Wood Associates,
Consulting Engineers

"In my opinion, it is extremely difficult to apply Dr. Link's statement with regards to an individual's security being more dependent upon his personality than his mind, to individuals in all professions. However, as applied specifically to professional engineers, I am completely in accord with Dr. Link's statement.

"To the professional engineer whose responsibility it is to render a technical and engineering service to various types of clients, it is extremely essential that he have the ability to present himself to all types of individuals and possess the personal characteristics and qualifications that will enable him to get along with people. The professional engineer may through his mind, have developed an excellent plan or process but unless he is able to present this plan or process to those responsible for its enactment, and obtain their approval his mental ability has availed him nothing.

"In order to develop this essential personality, the professional engineer should train himself to be as interested in people as he is in the technical matters of his engineering profession. This interest should be cultivated and maintained by active participation and membership in technical societies, clubs, fraternal organizations, civic groups, etc. Perfunc-



tory membership in these groups is not sufficient, the professional engineer should do everything possible to become an officer or leader in these various groups and have as much personal contact with each member in the group as possible in order to be familiar with his business and background, and to have each member well acquainted with his work as a professional engineer. If this training for association with people has been begun at an early age in high school and college by active participation in group sports, speaking groups, publications, technical societies, social fraternities, etc., the professional engineer will have established an excellent foundation for his personality.

"One of the fundamental aims of personality development is 'to get people to like you.' The key to success in this endeavor is to develop one's thinking more in the terms of 'the other fellow' than in himself. In almost every psychology book there is set forth plans for making friends or making folks like you. Remembering names, being natural, be easy-going, sincerity, are only a few of the points included in most of these plans. Probably the key to all of these plans can be found in the Biblical

quotation from Matthew: 'Therefore all things whatsoever ye would that men should do to you, do ye even so to them—'.

"One other great contributing factor to personality is appearance. I have several friends who are not engineers but claim 'you can tell an engineer just by looking at him.' Too often a shabby hat, an untidy collar and tie, an unpressed suit and unpolished shoes are the mark of the engineer. A neat and tidy appearance can contribute greatly to that important 'first impression.'

"Personality development is not a program or course that can be studied and then discarded. It is a continuing process and one that requires painstaking care and effort to master and to improve. However, the many benefits that accrue to the engineer with the personality, more than justify the effort."

Thank you, Engineer Derby. Question: Just what can be done about this shabby hat and tie business? Does the fault lie at the college level? Does the engineer fail to learn early in the game that he must look as well as act like a professional man? Your comments, please.

Speaking of Personality . . .

A news story from the Washington County Chapter of the Pennsylvania SPEs reads as follows:
". . . the Washington Toastmasters Club presented their regular program for the Chapter in line with the article on personality that appeared in the December issue of the *American Engineer* . . ."

Real Progress . . .

In Engineer Derby's condensed article printed above, we asked for comments on just where the profession falls down in teaching its members more about true *professionalism*. No sooner written when the mail yielded a letter that serves as one man's appraisal of the situation.

Meet . . .
Engineer F. A. Wallace,
Chr., Dept. of Civil Engineering
College of the Pacific,
Stockton, Calif., who says:

". . . Within the last fifteen years, a limited group of engineering educators have realized the neglect of the development of professional characteristics in engineering students. Unfortunately, this realization has come only to a minority of engineering faculties and administrators. Again, one may justify the lack of attention to the more cultural and humanitarian courses in engineering curricula because of the pressure of industry and employers to have men who at the time of employment are skilled in some sub-professional capacity such as drafting. Consequently, engineering curricula have been filled with many units of courses in drafting, machine shop work and in what may be called the 'skill' occupations. It was evident also that four years was considered as the most economical limit for the majority of engineering students. Definitely, therefore, engineers were trained not as professional men and leaders but as technicians.

"Modern professional engineering educators—and once again the word 'professional' is emphasized—endeavor to prepare engineers professionally by including in the four year curriculum approximately fifteen to twenty-five per cent of such subjects as English, speech, phychology, economics and others relating to the understanding of the needs and actions of his fellow men—the so-called humanities. The Massachusetts Institute of Technology, California Institute of Technology and Carnegie Institute of Technology have one year out of the four devoted to these cultural and humanitarian subjects.

"Naturally, a question arises as to how such courses can be included without overloading the student program. The answer is that many of the 'skill' courses, such as drafting, shop work, etc., *have been reduced or entirely eliminated*. The emphasis during these four years is on how to think from the standpoint of fundamental scientific concepts and how to live and act from the standpoint of the ethics and human relations. Evidently, therefore, the four year course will not provide the employer with a good draftsman or a fast computer. But he will obtain a man who can think analytically and who realizes the overall problem of the administration and conduct of the employer's affairs.

"This trend in professionalism and the stressing of a thorough knowledge of the basic concepts in engineering education has not come wholly from educators. One might say that much if not all of it stems from the views of many far-sighted managing engineers in industry and from engineers in private practice. Specialization has increased to such an extent that such employers realize that to include any subject to the extent required to master it thoroughly in school is impossible. A graduate who does have a thorough knowledge of the application of the basic concepts of engineering, on the other hand, according to such employers, can in a relatively short time acquire the necessary know-how of the particular specialty in which the graduate is engaged . . .

"The professional Engineer, therefore, is not an imaginary quantity, not merely another descriptive term. Engineering educators have begun to realize their responsibility toward the attainment of professional status of their graduates; far-sighted employers are demanding engineers of professional status who can become leaders as well as technical experts; and the people, through legislation, are demanding professionally competent engineers."

Coming In April . . .

The next issue of the *American Engineer* will carry the condensed report "How To Improve Engineering - Management Communication." This study is the result of a canvass of America's industry, by NSPE's Engineers' Conference Board for Industry. It is filled with facts and figures, and what subject could be of more interest to YOU? Don't miss it.

That's from an educator, and it is encouraging. As most of us know, many of our schools are trying to do an ever better job of preparing young men for happier, more successful careers in engineering.

If you like *Professional Postscripts* how about letting us know? And more important, if you don't like it or have suggestions for improvement, please drop us a line.

We've enjoyed this first meeting, and hope you'll be back next month.

—The Editors.

With Our Members . . .

Congressman's Visit Inspires New Interest In Public Affairs

A recent visit of Congressman Hugh D. Scott, former Chairman of the Republican National Committee, to the Philadelphia Chapter has led to an appeal by the President of the Chapter, Allan H. Kidder, P. E.

In his speech, Representative Scott made reference to the fact that a disproportionately small number of professional engineers sat in Congress and other law-making bodies. He called upon professional engineers to take a more active part in public life.

As a result, President Kidder recently sent a memorandum to chapter members in which he said in part:

"Let us no longer neglect such opportunities for participation in public affairs as are available. Our schoolboards and borough councils need our active participation. Even though few of us may aspire to participate in state or national legislative bodies, the by-product of participation in local affairs is certain to gain the respect of men who will go on from local to state and national service. Such friends will welcome and may seek your opinion when they are confronted with a decision involving engineering considerations."

Arkansas Society Annual Meeting At Little Rock

Beverly E. Ryan, Little Rock Municipal Waterworks engineer, was named president of the Arkansas Society of Professional Engineers recently.

Other new officers elected include:

Harold Eckstrom, chief engineer of the Arkansas Foundry Company, Little Rock, president-elect; George F. Branigan of Fayetteville, dean of the University of Arkansas College of Engineering, vice president; Edward Gerald Smith of the Kenneth W. Lefever engineering firm, Little Rock, secretary; W. Terry Field of Associated Industrial Engineers, North Little Rock, treasurer; Robert C. Wray of Fayetteville, head of the University of Arkansas College of Engineering's Department of Engineering Mechanics, and F. M. Methvin, El Dorado city engineer, directors.

Twenty-six young engineers who passed the State Board of Registration for Professional Engineers during the past year received certificates.

L. L. Dresser of Tulsa, Okla., president of NSPE, was principal speaker at the luncheon meeting.

T. C. Forrest, jr. of Dallas, Tex., vice president of the national organization, spoke at a dinner meeting closing out the one-day convention program.

Ohio Chapter Hears GE Engineer Describe Jet-Powered Locomotives

"Jet Engines" was the subject of a speech recently by N. F. Frischhertz of the Cincinnati Division of the General Electric Company before the Marion Chapter of the Ohio SPE.

A portent of the future was unfolded by Mr. Frischhertz as he described a locomotive powered with a jet engine. This engine, built and tested for the Union Pacific Railroad by the General Electric Company, has proved so successful that ten more are now on order, he said.

Due to the rapid development of the jet engine and the simplicity of its design, all costs, including maintenance, make it compare favorably with the reciprocating engine if it is operated at high altitudes, Mr. Frischhertz said.

Columbus Engineers Hear Panel Discussion Of City's Plans, Problems

Present problems and plans for the future were discussed by a round table panel before the Franklin County Chapter of the Ohio SPE recently. Elmer A. Keller, Director of Public Services for the City of Columbns, was the moderator.

Also on the panel were Orris Bonney, Chief Engineer of the Division of Sewage and Drainage, Robert F. Werner, Chief Engineer, Paul C. Laux, Superintendent of the Division of Water, Robert N. Tucker, Chief Engineer of the Electricity Division, and James H. Blodgett, Superintendent of Sewage Treatment.

International TV Just Around Corner, Georgia Group Hears

The Atlanta Chapter heard J. Leonard Reinsch, managing director of the Cox Radio and Television Properties, declare that "television will have an even greater impact on the American way of life than the automobile."

Reinsch said that international television will be a reality in the not-too-distant future and will drastically change the thinking habits and knowledge of mankind. International television is already possible, he said.

SOUTH CAROLINA OFFICERS

Newly elected officers of the South Carolina Society are: Seated: C. A. Farish, Columbia, S. C., First Vice Pres.; C. T. Wise, Greenville, S. C., President; John F. Reynolds, Jacksonville, Fla., Vice-Pres., N.S.P.E., who was present and addressed the one-day annual convention, held January 18th at the Poinsett Hotel, Greenville, S. C. Standing: L. L. Paxson, Greenville, S. C., Secretary-Treasurer; H. E. Glenn, Clemson, S. C., Second Vice-Pres. and R. K. Rouse, Greenville, S. C., Re-elected National Director for N.S.P.E.

NSPE State Presidents To Meet March 14-15 During Ohio Annual

One of the highlights of the NSPE year will take place in Cleveland with the annual State Presidents' Meeting March 14-15.

The meeting is tied in with the 73rd annual convention of the Ohio Society.

Problems of administering state organizations and items of interest to professional engineers will be discussed. An all-star program of speakers has been arranged.

These include: George L. Tuve, head of the Mechanical Engineering Department of Case Institute of Technology and former President of the American Society of Heating and Ventilating Engineers.

Nathan W. Dougherty, Dean of Engineering of the University of Tennessee and Chairman of NSPE's Education Committee.

Frank W. Lovejoy, past President of the Sales Executives' Club of New York and now with Socony-Vacuum Oil Company.

James G. Stewart, Judge of the Supreme Court of Ohio.

Paul E. Weiland, Chief Engineer of the Public Utilities Commission of Ohio.

J. S. McKeon, Manager of University Relations in charge of Westinghouse's advanced educational program for technical and professional personnel.

John E. Kallgren, Plant Manager, Seiberling Rubber Company.

Edward J. Donnelly, Partner, J. E. Greiner Company, consulting engineers.

Philadelphia Hears duPont Executive Speak On "Progress"

The Philadelphia Chapter heard Louis P. Shannon, manager of the Eastern District of the duPont Company's Extension Division, describe some of the engineering activities of the duPont Company.

Mr. Shannon's topic was the "Psychology of Progress." He described the combination of scientific research, application of laboratory developments to commercial plant production, and business judgment which have enabled that company to make a great many unique contributions to the national welfare.

At the January meeting, the chapter held "Past President's Night." Seven ex-Presidents of the Philadelphia chapter: Bob Hudson, Bill Bush, John Costello, Gerry Lauter, Harry Halloran, Lou Bruder and Bill Toperzer, attended.

New Mexico Group Makes Investigation Of Tank Failure

The New Mexico Society submitted a report on the cause of failure of the municipal water tank of the City of Tucumcari, New Mexico, to the City Manager recently.

Several lives were lost in the accident, a considerable amount of damage was done to property and the city's water supply was seriously impaired. Members of the New Mexico Society heard of the tank's failure through the press and radio. Inasmuch as there was considerable doubt as to the cause of the failure, the Society believed it could render a public service by making an investigation and filing a report.

The Society did this as a voluntary public service, without charge of any kind to the city. The investigating team concluded that the cause of failure was a poorly welded vertical butt joint.

New York Chapter Hears Discussion Of Power Bills

The New York Chapter of the New York SPE heard George T. Minasian, P. E., Director of Community Relations, Consolidated Edison Company discuss "The Future of Niagara Power."

Mr. Minasian, a former Vice President of the Chapter, discussed the various aspects of three bills pending in Congress, each of which provides for the development of power from the Niagara Falls. One, the Lehman-Roosevelt Bill, provides for the development of power by the Federal government. Another, the Ives-Cole Bill, would authorize New York State to develop the power. The third, the Capehart-Miller Bill, would permit development by privately-owned utilities.

In connection with Cornell University and the New York State Society, the chapter is offering courses without fee and without credit in Leadership and Participation in Management Conferences, Current Trends in Collective Bargaining, and Human Relations Problems for Supervisors. Eight sessions are held in each course.

Wisconsin Society Holds 9th Annual Convention In Milwaukee Jan. 24-26

The Wisconsin Society held its ninth annual meeting at the Schroeder Hotel in Milwaukee January 24-26. The Mayor of Milwaukee gave a welcoming address and NSPE President L. L. Dresser was in attendance, as was NSPE Vice-President elect E. W. Seeger.

Officers were elected and an address: "Why Professional Engineers?" was given by John Gammell, Assistant to the Vice President, General Machinery Division, Allis-Chalmers Manufacturing Company.

Individual group meetings were held in the following groups: Consulting, Industrial, Public Employment, and Education. A progress report was given by Grover Keeth, Chairman, Engineering Division, Wisconsin Registration Board of Architects and Professional Engineers.

Officers of the Wisconsin Society include: F. T. Agthe, Pres., Milwaukee; R. C. Clark, First Vice Pres.—La Crosse; P. G. Eliis, Second Vice Pres., Milwaukee; W. G. Younguist, Secretary, Madison; L. M. Schindler, Treasurer, Appleton; E. J. Kallevang, Past Pres., Madison; G. A. Sievers, Director, Milwaukee; H. C. Trester, Director, Oshkosh; B. C. Lueders, Director, Baraboo; Carl A. Cajanus, Director, Wisconsin Rapids; Albert O. Ayres, Director, Eau Claire; A. G. Behling, National Representative, Milwaukee; Geo. W. Martin, National Representative, Green Bay.

John Boyle Named "Most Outstanding" By Oregon Group

John C. Boyle of Medford, Oregon, was named the outstanding engineer of that state for 1951 for his work in hydro-electric power development. The announcement was made by H. S. Johnson, outgoing President of the Professional Engineers of Oregon, at the group's annual meeting.

Mr. Boyle is General Manager and Acting Chief Engineer of the California-Oregon Power Company. New officers of the Professional Engineers of Oregon were installed for 1952. They are: W. C. Williams, President; Robert Shoemaker, Vice President; Paul Christerson, Treasurer. Evan Kennedy, Loren Thompson, Arnold Westling and John Boyle were named trustees.

Texas Society Employs Effective PR Program To Gain Statewide Publicity

The Texas Society recently employed highly effective publicity and public relations techniques in connection with its annual meeting, January 24-26, which may be of interest and application to other chapters and state societies.

The affair received wide mention throughout the state and the host city's newspapers published a great many extended accounts of the proceedings and pictures of the participants.

Photostatic copies of publicity received were sent to the American Engineer and it is obvious that the State Society, Galveston Chapter, host to the affair, and Publicity Chairman Kenneth A. Campbell, P. E., deserve high credit for their energy and their effective methods employed.

Through the efforts of Engineer Campbell and his committee, long stories giving details of the convention, its speakers, and the philosophy underlying professional engineering appeared almost daily in the Galveston papers for a period of ten days before and during the conclave.

The best part of the program was that it also caused stories about the convention to be published in newspapers in more than 20 Lone Star State cities.

The Publicity Committee prepared several press releases containing basic information about the meeting and its speakers and programs. These contained space for the insertion of local names of engineers throughout the state. The releases, with a "mat" of President Dresser, (a picture impressed on tough fiberous material) were sent to all cities all over Texas having NSPE chapters.

The names of local engineers were inserted and the stories were taken to the local papers. Thus, in Houston, for example, the headline on a story in the Houston paper read: "MANY HOUSTON ENGINEERS TO ATTEND MEET."

The Waco paper noted in its story that 12 Waco engineers planned to attend. Other papers throughout Texas were able to play up the local angle, make the story more interesting to local readers, and get a great deal of publicity about engineers and engineering in the story, too.

Obviously, this took a great deal of teamwork and cooperation all around, and the AMERICAN ENGINEER is glad to recognize the solid accomplishment of the Texas engineers.

Kenneth Campbell, P. E., publicity chairman of the Galveston Chapter, sparked drive for state-wide publicity.

A check list of steps taken by the Texas Society in its PR program has been obtained and it will be the subject of a Public Relations Newsletter to chapter Presidents and Publicity Chairmen in the near future.

Mathieu President Of Texas Society; Succeeds Nichols

Harry P. Mathieu, associated with Continental Engineers, Inc., of Lubbock, Texas, was elected President of the Texas State Society at its recent annual meeting. He succeeds Marvin Nichols of Fort Worth.

Other officers installed were: J. Neils Thompson, professor of civil engineering at the University of Texas, First Vice President, and J. S. Hudnall, consulting engineer from Tyler, Second Vice President.

Elgin B. Robertson, President of the Plastics Manufacturing Company of Dallas, was selected as National Director. O. T. Lodal, consulting engineer of San Antonio is Director at Large, Noah E. Hull, Manager of the Hughes Gun Company of Houston, is a State Director.

Judge Charles G. Dibrell of the District Court addressed the annual meeting of the Society. Dr. L. L. Dresser, NSPE President, urged members to work for civil improvements.

Colorado Society Gains Public Praise With Tunnel Study

The Colorado Society of Professional Engineers has gained a great deal of public good will by volunteering, as a public service, to make an impartial and objective study of whether an existing tunnel through one of the steepest ranges of the Rocky Mountains can be adapted to joint automobile-railroad use.

At present only trains use Moffat Tunnel, a six-and-a-half mile bore through the mountains. Autos now take a twisting, length route over Berthoud Pass which is more than 20 miles longer than the Moffat Tunnel Route.

The Colorado Society offered its services to determine if it is feasible to work out some method whereby cars can use the tunnel, too. Mark U. Watrous, Colorado state highway engineer, announced that a committee of CSPE members had volunteered to "give the public free advantage of costly ventilation, electrical, railroad and highway engineering knowledge."

"If a price tag were put on the engineering talent to be devoted to this civic undertaking, it is doubtful if the Highway Department could meet the bill," Mr. Watrous declared.

The offer was reported in Denver and other Colorado papers and a highly favorable reaction followed.

Members of the committee include CSPE members Ivan C. Crawford, R. O. Davis, A. F. Weers, L. M. Robertson, L. E. Rollins, J. H. McCabe, A. J. Ryan and J. J. Donahue.

The Colorado Society volunteered its services through State President Sam H. Hawkins. THE AMERICAN ENGINEER will carry further stories on this outstanding public service.

Minnesota Society Annual Meeting Has Many Notable Guests

Celebrities were plentiful at the Minnesota Society's State Meeting in Minneapolis, February 20-22.

Among those present were Minnesota Governor C. Elmer Anderson, Minneapolis Mayor Eric C. Hoyer and Congressman Walter H. Judd. Many notables of the engineering world were also in attendance, among them NSPE President Dresser.

The meeting is just being held as THE AMERICAN ENGINEER goes to press. A complete report will be carried in the next issue.

President G. Brooks Earnest addresses Cleveland meeting.

Cleveland Society Holds Largest Annual Meeting

Two hundred engineers and their wives attended the 16th Annual Meeting of the Cleveland Society of Professional Engineers on January 22 at the Women's City Club. It was the largest meeting in the history of the Society.

The eighth and ninth CSPE "Citation and Award" to ever be given by the Society were bestowed upon two engineers for "Distinguished Engineering Contribution to the Public Welfare." They were received by John C. Wenrick, Commissioner of Engineering and Construction for the City of Cleveland, and Allison C. Neff, Vice President of Armco Drainage and Metal Products Inc., Middletown, Ohio.

Four men and the first woman in the history of the Society received Special President's Awards for outstanding service to the Society. They are: John Antweiler, City of Cleveland Water Engineer, for his work with the Board of Direction; Robert J. Edwards, Civil Engineer, for his work as Chairman of the Program Committee; Robert Giles, Warner Bros. Theatres Engineer, for his work as Secretary; Miss Jo Godley, Structural Design Engineer for the Inner Belt Freeway, for her work with the Public Relations Committee; and Thompson F. Hindman, Head of Pittsburgh Testing Labs Cleveland office, for his work as Historian and Trustee to the Ohio Society.

Columnist John W. Love of the Cleveland *Press* received special recognition for a series of columns he wrote during 1951 on the economic status of the engineer.

New officers of the Society installed by 1951 Pres. G. Brooks Earnest for 1952 are: President, George C. Fleck, Johns-Manville Co.; Vice President, James C. F. Shafer, James C. F. Shafer Co.; Secretary, Robert Giles; Treasurer, Fred Gaub, County Engineer's Office; and Historian, Thompson F. Hindman.

New Directors elected are: Leon Cleverly, Harris-Seybold Co.; Robert J. Edwards; Verne Clark, Verne Clark Engineering Co.; Paul Mehnert, Consulting Engineer; and Jasper Avery, Partner, Havens and Emerson Co.

Curtis Lee Smith, executive director of the Cleveland Chamber of Commerce was speaker. His topic was "Cleveland Needs Human Catylists." Jack Kennedy, former NSPE Director, was Toastmaster.

Connecticut Society Holds Annual Meeting At Hartford

The Connecticut Society held its annual meeting at the Hotel Bond in Hartford on February 23. Among the topics discussed was the proposed Recommended Minimum Salary Schedule and the Schedule of Fees to Architects.

A resolution that the Society write to the Commissioner of Public Works of the State of Connecticut requesting him to require that engineering work performed under certain conditions be done by registered engineers was considered.

North Dakota Names Directors For New Year

Announcement has been made of the new Directors from North Dakota for the coming year. They are: District 1, Keith B. MacKichan of Grand Forks; District 2, H. P. Jandacek of Minot; District 3, C. C. Larson of Bismarck; and District 4, Howard W. McCauley of Fargo.

Paul Troast Is Honored By Hudson County Chapter

Paul Troast was named Engineer of the Year by the Hudson County Chapter of the New Jersey Society of Professional Engineers.

New President George C. Fleck receives gavel from outgoing President Earnest.

Earnest 'phones John C. Wenrick, Commissioner of Engineering and Construction for the City of Cleveland that he has won citation. Illness prevented Mr. Wenrick from attending.

STATEMENT REQUIRED BY THE ACT OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, AND JULY 2, 1946 (Title 39, United States Code, Section 233) SHOWING THE OWNERSHIP, MANAGEMENT, AND CIRCULATION OF AMERICAN ENGINEER, published monthly at 1121 15th Street, NW, Washington, D. C., for September, 1951.

1. The names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, National Society of Professional Engineers, 1121-15th St., NW, Washington, D. C. Editor, Kenneth E. Trombley, 1121-15th St., NW, Washington, D. C. Managing editor, none. Business manager, Arthur F. Beck, 1121-15th St., NW, Washington, D. C.

2. The owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual member, must be given.) National Society of Professional Engineers, 1121-15th St., NW, Washington, D. C. L. L. Dresser, President, P. O. Box 2518, Tulsa, Oklahoma. Paul H. Robbins, Executive Director, 1121-15th St., NW, Washington, D. C.

3. The known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. Paragraphs 2 and 3 include, in cases where the stockholders or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting; also the statements in the two paragraphs show the affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner.

5. The average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the 12 months preceding the date shown above was: (This information is required from daily, weekly, semiweekly, and triweekly newspapers only.) None.

ARTHUR F. BECK
Business Manager

Sworn to and subscribed before me this 17th day of September, 1951.

[SEAL] ARTHUR R. WOODS
Notary Public
(My commission expires February 15, 1956.)

Chapter News From All Over

ALABAMA

James R. Goetz, President of the Birmingham Chapter, was honored by election to the Alabama Academy of Science. The Academy is composed of outstanding Alabama Scientists and Engineers from the educational and industrial fields.

ARIZONA

The following officers were elected by the Southern Arizona chapter: President, Fred H. Jobusch; Vice President, John H. Brown; Secretary-Treasurer, Benjamin McLean, Director at Large, Davis Bartholomew.

The chapter reports a present membership of 45, an increase of 50% over last year. Nine of these are EIT members.

At the February meeting, Robert Morrison, Pima County Attorney, gave an official report of his investigations into unethical and illegal practices of engineering in Tucson. To date, 10 violators have been contacted and nine have promised to cease their violations.

The third annual state meeting was held February 23 at the Adams Hotel in Phoenix.

CALIFORNIA

The Los Angeles Chapter held its February meeting at the Chapman Park Hotel and heard Robert S. Roe speak on "Consumer Protection Under the Food and Drug Act." Mr. Roe is Chief of the Los Angeles District, U. S. Food and Drug Administration.

The San Joaquin Chapter opened its year with a social evening—dinner, cocktails and entertainment, at the House of Murphy.

The following were elected officers of the San Jose Chapter: President, Leo W. Ruth; Vice-President, Ralph K. Daugherty; Secretary, A. J. MacDonald, Jr.; Treasurer, Frank M. Belick; State Director, Harry V. Miller; Board of Directors, Robert S. Kimball, Connell C. McRae, Traver J. Smith.

CONNECTICUT

George A. Nagel, P. E., Chairman of the Membership Committee, announced that a membership drive has brought ten new members into the chapter.

DELAWARE

Dr. Thomas H. Chilton, Technical Director, Development Engineering Division of the DuPont Company, spoke before the Delaware Society at Wilmington.

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Now Available

Metal P. E. Emblems for Your Automobile License Plate Brackets

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Please send me at once the 3¼-inch P.E. Emblem for my car. I enclose .... check .... money order for $2.50 to cover the cost of the emblem, handling and mailing charges. Send to:

(Name) .....

(Address) .....

(City) .....(State).....

I am registered in (name of state) .....

I am ..... am not ..... a member of NSPE.

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District of Columbia

The D. C. Society inaugurated Engineers' Week by attending a business meeting at the auditorium of The Washington Post building. A dinner and a short business session were followed by an address by NSPE Executive Director Paul H. Robbins. Mr. Robbins noted that high speed newspaper presses, a contribution to the distribution of public information, are made possible by engineering. A proclamation was read by the Commissioners of the District of Columbia urging Washingtonians to "join with us in extending recognition and honor to our engineers who have so materially contributed to our American civilization and to the preservation of our way of life whenever it was threatened."

After the meeting, the members toured the Washington Post's printing and editorial offices.

Florida

Governor Fuller Warren proclaimed February 17-23 "Engineers' Week."

The following have been elected as officers of the State Society: Stanley Warth, President; John E. Kiker, Vice President; C. D. Hartman, Secretary-Treasurer; and E. A. Anderson, National Director.

J. J. Bennett has been elected president of the Professional Engineers Association of Southeast Florida.

Georgia

New officers of the Augusta Chapter are: President, John C. Patchen; Vice President, Allan L. Matthews; Secretary, John C. Cleckley; Treasurer, Winston M. Cooper; State Representative, James N. Maples. Directors, M. P. Phillips, H. F. Zimmerman, F. A. McAllister, jr., and O. M. Roberts.

The Savannah Chapter is trying to find out which night is best to hold meetings to insure a better attendance.

A return reply post card is being sent to each member of the Chapter, asking (1) Which night is acceptable; (2) which nights are not acceptable, and (3) whether a fixed night or an announced night is acceptable.

Two films, "Pipe Lines to the Clouds" and "Medical Effects of Atomic Bombs," were shown at the meeting of the Central Chapter held January 21, in LaGrange.

The film on pipe lines was prepared by the General Electric Co., and the film on atomic bombs was prepared by the U. S. Army Signal Corps, and both were presented by a representative of the State Health Department.

Illinois

John Sweetman assumed office as President of the Central Illinois Chapter at the January meeting. Fred Bandelin, Director of Research for Flint, Eaton & Co. spoke on "Recent Developments in Chemo-Therapeutic Agents."

The Capital Chapter elected Leslie F. Ryburn, President for the ensuing term. Other officers are: Carl Thunman, Sr., vice president; Charles F. Merchant, secretary; M. R. Golly, treasurer and Len Crawford, chapter representative.

Indiana

Calumet Chapter of the Indiana SPE scheduled a special meeting in the observance of Engineers Week. Colonel Chester Lichtenberg, Vice President of the Central Area of NSPE, was principal speaker. A social hour and dinner at the Marshall House in Gary preceded the meeting. Colonel Lichtenberg was recently named "engineer of the year" in Indiana by the Hoosier state society.

Kansas

The Wichita Chapter heard O. P. Bullock, P.E., discuss "The Supply Line to Russia," a resume of his experiences while stationed in Iran during World War II, during which time he was in charge of numerous construction projects on the road linking Russia to Africa.

Maryland

The Maryland Society held a dinner meeting at the Park Plaza Hotel in honor of Engineers Week. Governor Theodore McKeldin of the Old Line State was present.

The principal speaker was Colonel Alan J. McCutchen, U. S. Army Corps of Engineers, who spoke on "Army Engineers in the Nation's Capital."

The Governor, and Mayor D'Alesandro of Baltimore, have issued proclamations calling on all citizens to observe Engineers' Week.

Massachusetts

The North Shore Chapter presented a program "Civil Defense and the Professional Engineer" at its January meeting. Speakers from the CDA were present and a movie, "And a Voice Shall Be Heard," showing civil defense preparations of the City of Syracuse, N. Y., was shown.

Publicity and a dinner meeting featured the Metropolitan Chapter's observance of Engineers' Week. Leading Boston and suburban newspapers carried articles relating to the Professional Engineer. Editorials and news items were submitted to seven leading Boston radio stations for broadcast. A window display in the downtown Boston business district proclaimed Engineers' Week and contained a model, built by Atkins & Merrill, of a mobile liquid oxygen unit for fueling rockets. The week was highlighted by a dinner meeting on February 20.

Dean William C. White, director of day colleges of Northeastern University, delivered an address on "Current Problems and Trends in Engineering Education." Outstanding professors of Boston engineering schools attended the meeting as guests of the Chapter.

Michigan

New state officers have been elected. They are: President—Paul S. Calkins, Farmington; first Vice-President — Lester J. Richards, Midland; second Vice-President—Dudley Newton, Detroit; Secretary — Robert L. Wells, Grand Rapids; Treasurer —Carl K. Wirth, East Lansing; National Director — Arthur F. Plant, Detroit; Alternate National Director — Fred R. Cheek, Dearborn; Director-at-Large — Lehmann M. Dunn, Port Huron.

NSPE President-elect John D. Coleman spoke to the Detroit Chapter recently. Results of the chapter election were announced. The following officers were elected: President, Everett V. Martin; First Vice President, Richard H. McManus; Second Vice President, N. O. Saulter; Secretary, John V. Wickey; Treasurer, Arno Koch; Directors, Donald J. Henry, A. H. Patterson, and Herbert E. Zeil.

Missouri

The Western Chapter heard Philip E. Geissal, Chief Plan-

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ning Engineer for the City Plan Commission of the City of Kansas City, speak on "Express Highway and Redevelopment Planning."

New Jersey

Robert Westley, Chief Engineer of the Port Reading Terminal, the Reading Railroad Co., spoke to members of the Monmouth-Ocean Chapter, at the Crystal Brook Inn, Eatontown.

Mr. Westley told of the "Reconstruction of Coal Facilities Following Fire." He described a million dollar fire, last July, that destroyed the inner half of the pier at Port Reading, including the coal section, leaving the floating crane, dumper and coal shute a mass of twisted steel. To get some idea of the size of the construction, he said, the pan alone, that carries coal from cars to barges, weighs 75 tons.

Nevada

The Southern Nevada Chapter met at the Last Frontier Hotel in Las Vegas January 25. Jordan Crouch, Vice President of the First National Bank of Nevada, spoke on "Inflation."

"Federal economies would be the best approach to secure a balanced budget . . . The people must arrive at the state of mind where they accept economies that affect them personally as well as the country as a whole," the speaker said.

New York

The Dutchess County Chapter was host to the Winter meeting of the New York State Society on February 8 and 9. The meeting was held at Poughkeepsie.

The Monroe County Chapter held "Ladies' Night" January 31. A dinner, a fashion show, a dance and door prizes highlighted a vivacious social evening. Cards were available for those who did not care to dance.

The Niagara County Chapter held a joint meeting with the Niagara-International Section of the AIEE. Deane O. Hubbard, Vice President of the chapter, presented a slide-talk on "Electrolytic Cells and Their Power Supply."

The Kings County Chapter heard Professor Olindo Grossi of the Department of Architecture of Pratt Institute talk on "What's New in Architecture."

The Westchester County Chapter heard Frank Hawkins, P. E., talk on "The Conversion of Westchester County to Natural Gas," following a buffet supper and a business meeting.

The Albany County Chapter heard Mitchell H. Kline, Chief of the Rare Precious Metals Branch of the U. S. Bureau of Mines talk on: "The Bureau of Mines Strategic Minerals Program." Work of the AEC in searching for source minerals of fissionable and rare-earth elements was also described.

The Bronx County Chapter heard a representative of the Consolidated Edison Company discuss "The Niagara Project." A supplementery report concerning the assignment of engineers to various precincts in the Bronx for Civil Defense purposes was discussed.

The Tompkins Chapter met on Lincoln's Birthday at the Ithaca Hotel. Attention was called to New York State Senate Bill #450, in which it is proposed to amend the State Engineering Law to provide that the word "workmen" be amended to include architects, engineers and draftsmen engaged in such work. As engineering is a profession and not a trade, a resolution was proposed and unanimously passed that the President be instructed to enter a protest against passage of the amendment.

Following the dinner, the group toured the Naval Training Center at the tip of Cayuga Lake.

Ohio

The Cincinnati Chapter heard W. E. Stanger of the General Electric Company describe jet engines and a technicolor movie on the subject was shown. Models were displayed so members could get a graphic idea of their construction.

A novel membership drive was scheduled for February 18. Members of the Committee will meet for dinner and then two names of new registrants will be given them. They will go in pairs to the prospective members' homes, explain the purposes of OSPE and NSPE, and then will return to the meeting place about 9:30 P.M. for refreshments and possibly a card game.

The Toledo Chapter heard Dr. Thomas H. Osgood, Dean of the School of Graduate Studies of Michigan State College, discuss "Scientific Research in a Democratic Society."

Oklahoma

The 51st Street Bridge in Tulsa was officially designated by the Oklahoma State Highway Commission to be named in honor of Homer X. White, outstanding bridge engineer. Plaques were put up at both ends of the bridge commemorating Mr. White's contributions to the state.

Governor Johnston Murray appointed two members of OSPE, David E. Fields of Tulsa, and F. E. Rice of Bartlesville, to the Oklahoma State Board of Registration for Engineers.

Pennsylvania

The Lehigh Valley Chapter of the Pennsylvania SPE heard William G. Christy, Director of the City of New York Department of Housing and Buildings, speak on "Air Pollution Control" at its February meeting.

The Committee on Education and Engineers-in-training held a meeting among engineering students January 16 to Stimulate interest in Professional Engineers' Registration. The gathering was a success with 64 in attendance.

The Johnston County Chapter heard Lloyd R. Bowman, Chairman of the Pittsburgh Chapter, discuss "The Engineer and Public Relations," at its February meeting at the Fort Stanwix Hotel.

(Continued on page 26)

N.S.P.E. Facts

NSPE members are always interested in the engineering employment represented on the Board of Directors. A review of the composition of the NSPE Board of Directors indicates the following:

Employed In	*Per Cent*
1. Industry	36%
2. Government . . . (all levels)	24%
3. Private Practice .	22%
4. Education	9%
5. Public Utilities .	9%

(*Continued from page* 25)

The Reading Chapter heard H. N. Muller, Jr., Assistant to the Vice President in Charge of Engineering of the Westinghouse Electric Corporation, talk on "A Long Range Look on Engineering Manpower."

President L. E. Weber appointed Tom Douglass to the General Chairmanship of the Engineers' Week Committee. Robert Schlatz, Carl Shelley, Howard Rickenbach and Richard Earle were also named to the committee.

The Midwestern Chapter heard William Eathorne, Mining Engineer, of the Accident Prevention Division, U. S. Bureau of Mines talk on "Demonstration of Static Electricity as Pertaining to Safety."

The Public Parking Authority of the City of Pittsburgh announced appointment of William R. B. Froehlich, P. E., as Executive Director. As head of the Authority, Engineer Froehlich will supervise the construction of the Triangle Public Parking Garages.

The Northeast Chapter held a Ladies Night. Entertainment, dancing, dinner and community singing were featured. Chester A. Thomas, Scranton industrialist, showed colored motion pictures of a trip through Great Britain, Wales, Paris and Versailles.

N.S.P.E. Officers

President, L. L. DRESSER, P.E.,
Dresser Engineering Co., Box 2518,
Tulsa, Oklahoma

Vice President, T. CARR FORREST, JR., P.E.,
Forrest and Cotton,
Praetorian Bldg., Dallas, Texas

Vice President, JOHN F. REYNOLDS, P.E.,
227 Park St., Jacksonville, Fla.

Vice President,
COL. CHESTER LICHTENBERG, P.E.,
4624 Tacoma Avenue, Ft. Wayne, Ind.

Vice President, DeWITT C. GRIFFIN, P.E.,
525 Central Bldg., Seattle, Wash.

Vice President, C. G. ROUSH, P.E.,
Manager, Westinghouse Electric Corp.
101 W. 11th St., Kansas City, Missouri

Vice President, GEORGE J. NICASTRO, P.E.,
Combustion Engineering—Superheater, Inc.
200 Madison Avenue, New York, N. Y.

Treasurer, RUSSELL B. ALLEN, P.E.,
Professor, Civil Engineering,
University of Maryland
4610 Hartwick Road, College Park, Md.

Executive Offices
1121 Fifteenth Street, N.W.
Washington 5, D. C.

Executive Director, PAUL H. ROBBINS, P.E.

New officers of the Erie chapter are: President: Hugh Nelson; Vice President: Mark Smith; Secretary: George Crantson; Treasurer: Owen Richardson; Directors: William Johnson; Elmer Coleman, J. E. Finley, F. A. Gorenflo, M. A. Viard and J. H. Robinson.

The Chester County Chapter heard Thomas W. Hopper, Chief Engineer of the Day and Zimmermann Company talk on "Highlights of an Industrial Survey for the Republic of Korea."

Tennessee

Officers of the Knoxville chapter, newly elected, are as follows: President—A. T. Granger; Vice President — T. J. Rentenbach; Sec'y-Treasurer—W. C. McCammon, Jr.; Past-President—Leonard C. Bailey; Directors—Hazen E. House, A. F. Bedinger, John V. Pierce, H. M. Brock; State Representative—Oscar L. King.

Texas

The Galveston County Chapter held its annual meeting recently and elected the following officers: President, E. M. Grimes; 1st Vice President, W. A. Sullender; 2d Vice President, Paul J. Hurd; 3d Vice President, Frank K. Webb; Executive Board, C. W. Stoneburner, E. F. Kinzer, R. R. Osborn, Ken Heagy, C. W. Warren, S. B. Schapiro and G. M. Brady.

The San Jacinto Chapter held an open forum discussion on the proposed revision of the salary and fee schedule committee.

The Sabine Chapter has recently formed a Ladies' Auxiliary. Mrs. Charles L. Davidson is President.

West Virginia

The Fairmont Chapter elected Joe Early President, Erwin Withers Vice President, and John Fiexon Secretary-Treasurer.

The Appalachian Chapter held its annual installation banquet and ladies night at the Black Knight Country Club, Beckley, on Wednesday, January 16, at 7:00 P. M. Outgoing President A. S. Cappellari presided.

The new officers for 1952 are:

C. C. Darrah, President; John P. Hindsley, 1st Vice-President; B. B. Corker, 2nd Vice-President; John C. Morton, Secretary-Treasurer; John S. Wood, Cecil H. Graham, and A. J. Walker, Directors; Robert L. Davis and A. S. Cappellari, Ex Officio Directors.

The Weirton Chapter heard W. L. Supler, district manager of General Electric Company X-Ray Division, Pittsburgh, Pennsylvania, speak on "The Varied Use of X-Ray in Industry."

Wheeling Chapter attained a nearly 100 per cent attendance at a dinner meeting designated as "Bill McCluskey Night," held Wednesday, January 16, in the McLure Hotel, honoring Wheeling Chapter's own W. O. McCluskey, Jr., new State President.

The annual installation of chapter officers took place January 25 at the dinner-dance meeting held at the Appalachian Electric Power Company auditorium at Logan. The following officers will serve for 1952:

President, W. T. Harvey, Jr.; First Vice-President, Paul M. Vannoy; Second Vice-President, Fred Ramsey; Secretary and Treasurer, J. A. Kovich; Directors, Lonnie Ellison, C. E. Minns, A. S. J. Hopkins, and W. R. Long.

The following officers have been elected by the Fairmont Chapter for the year 1952: President, Joseph Early; Vice-President, E. C. Withers; Secretary-Treasurer, John D. Flexon.

Wisconsin

The Western Chapter met at the Stoddard Hotel in La Crosse. Discussion was held regarding plans for a meeting in March of interested, qualified high school seniors and members of the faculty of the Engineering College of the University of Wisconsin with local professional engineers. Various phases of professional engineering work will be explained to the students.

Secretary Donald Grunditz reported on the state convention in Milwaukee. Highlight of the convention for the Western Chapter was the election of R. C. Clark of LaCrosse as State President.

Speaker of the evening was Sam Markos who presented an interesting talk on the history of the manufacture of Oriental rugs. He outlined the factors such as quality of wool, dye, number of knots per square inch, and quality of workmanship which goes to make the Oriental rugs durable enough to wear several hundred years.

Unity Group

(*Continued from page* 14)

fession. This subject is very complicated because of the interrelationship of the local and regional societies and their relation to the national engineering societies and because of the existence in some areas of competing regional groups.

"It is hoped that the integration of cooperative effort at the national level evidenced by the development of the unity organization will enable that organization to establish increased unity and order in the relationships between regional, state and local groups. It is recommended that the unity organization work upon this problem with sustained vigor, patience and understanding.

"Membership—Individuals

"The Exploratory Group believes that provision in the unity organization for some form of membership of individuals is an important and perhaps necessary element of strength. This point of view is expressed also in some of the reports of the views of the constituent societies. On the other hand, there is no unanimity of view as to the nature of and qualifications for such membership.

"It is recommended that this matter be given serious study by the unity organization. Section 'E' of this report presents a discussion of the principal factors bearing on this matter as they have come before the Exploratory Group.

"Financing

"The expenses of the unity organization will depend upon the scope of its activities which in turn will determine the necessary size of its staff. Assurance of the maintenance of an income adequate to support the program of activities decided upon at any time is naturally a fundamental necessity. The means of doing this will depend in part upon the decisions made regarding membership, particularly whether or not dues-paying members are to be included as a part of the organization. The Exploratory Group believes that the contributions which the constituent societies may make to the cost of operation of the unity organization should be in proportion to the voting membership of these societies.

"Relationship to Engineers' Council for Professional Development

"The scope of activities will be influenced by a determination of the relationship which should exist between the unity organization and Engineers' Council for Professional Development. There should be no duplication of effort or activity. It is the view of the Exploratory Group that the interests of the profession would be advanced by the integration of ECPD as a department of the unity organization.

"Properly carried out, it should be possible to bring about such an integration without losing the impetus which ECPD now has as an active and effective organization.

"Relationship to National Society of Professional Engineers

"The initial step of the unity organization here proposed places the National Society of Professional Engineers on the same footing as the other societies represented in the Exploratory Group; namely, as a prospective member of E.J.C.

"However, one of the plans studied by the Exploratory Group and included in their report of December 16, 1950, contemplates a type of organization in which NSPE, with appropriate modifications, would be merged with E.J.C. to form the unity organization.

"It is recommended that careful study be given to the relationship between the activities of NSPE and those of E.J.C. as a whole with a view to working out the most harmonious and effective relationship.

"Name

"It has been suggested that the present name, 'Engineers' Joint Council,' might be changed to advantage."

Commenting on the matter of individual membership in the unity organization, the report had the following observation:

"In the discussions of the advantages and disadvantages of a provision for membership by individuals in the unity organization, three general bases for such membership have been considered:

"1. Automatic Membership

All members of the constituent societies would be considered automatically to be members of the unity organization. In an alternative this might apply only to all members in certain selected grades of membership.

"2. Voluntary Membership — Broad Base

All members of the constituent societies would be eligible to be candidates for membership in the unity organization — action by that organization being necessary for their election. Eligibility might be limited to certain grades

(*Continued on page* 29)

NSPE Committee Heads

Awards—A. G. Behling, 2326 S. 75th St., Milwaukee, Wis.

Budget—T. C. Forrest, Jr., Praetorian Bldg., Dallas, Tex.

Chapter Activities—Joe Williamson, Jr., 408 Olive Street, Room 203 St. Louis 2, Missouri.

Constitution and Bylaws — Prof. William A. Oliver, Univ. of Illinois, College of Engineering, Urbana, Ill.

Education—Dean N. W. Dougherty, Univ. of Tennessee, Knoxville, 16, Tenn.

Employment Practice—Robert A. Blackburn, 3110 Koppers Bldg., Pittsburgh 19, Pa.

Ethical Practice—John F. Reynolds, P. O. Box 4442, Jacksonville, Fla.

Extension—Alfred J. Ryan, 1340 Glenarm Pl., Denver 2, Col.

International Relations — J. J. Loustaunau, 75 Pitts St., Boston, Mass.

Inter-Society Relations — Lt. Col. H. H. Hill, 4512 Wooddale Ave., Minneapolis, Minn.

Inter-Professional Relations — Dr. C. L. Emerson, Georgia Tech., Atlanta, Ga.

Ladies' Auxiliary—John D. Coleman, 2520 Elsmere St., Dayton, O.

Land Surveyor — S. A. Bauer, 1836 Euclid Ave., Cleveland, O.

Legislative — C. T. Shoch, 2129 Walnut St., Allentown, Penna.

Liability Insurance—A. G. Stanford, 96 Poplar St., N. W., Atlanta, Ga.

Membership—Harry G. Kennedy, 1307 Kanawha Valley Bldg., Charleston 1, W. Va.

National Affairs — Stephen G. Szabo, General Motors Corp., Detroit 2, Mich.

National Defense — Col. Chester Lichtenberg, 4624 Tacoma Ave., Ft. Wayne, Ind.

Publications—G. J. Nicastro, 200 Madison Ave., New York, N. Y.

Public Relations — C. G. Roush, 1014 Fairfax Bldg., Kansas City, Mo.

Registration — R. J. Rhinehart, 411 Main St., Pine Bluff, Ark.

Resolutions — DeWitt C. Griffin, 525 Central Bldg., Seattle 4, Wash.

Salaries and Fees—Ole Singstad, 15 Whitehall St., New York 4, N. Y.

Young Engineer — R. E. Allen, 1731 Auburn Ave., Dayton, Ohio.

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Executive Position

(*Continued from page* 7)

ENGINEER asked him to comment candidly on his experiences in industry. We believe that these will be of great value in explicitly setting forth a case history of a successful executive. Mr. Thrailkill says:

"During World War I, I left school after finishing the second year in high school and signed up with the United States Navy Yard to serve an apprenticeship as an electrician. After completing this training in a four-year period with honors and working a year as a journeyman, through association with an electrical engineer in the Navy Yard, I was inspired to go on to college and obtain a degree in electrical engineering.

"My association with men of riper years and, having worked in a supervisory capacity and having men working under me who were much older, my attitude on entering college was anything but that of a normal student entering the institution. I had not been used to doing a great deal of studying and my reading was confined pretty much to the work in which I was engaged.

"As a result, on taking aptitude and psychological tests upon entering the University, I was rated in the lowest group that had entered in the freshman year in engineering. After four years of endeavor, however, I graduated with magna cum laude honor as the highest engineering student graduate in my class.

"ALTHOUGH I was able to get along well in my studies, the counseling I received from the Dean of Engineering was anything but that which would be conducive to a rounded out education. Because of my scholastic standing, I was recommended for membership in Phi Beta Kappa but was turned down, as I understand it, because I was not sufficiently 'educated.' How true that was, I never realized until later years. I had the desire to take some courses in the College of Business Administration in order to improve my general knowledge, but this was frowned upon in the extreme by the Dean of Engineering.

"Upon graduation with such a distinguished honor, and having, as well, a foundation in practical experience that was somewhat unusual, it seemed that I should have no trouble finding employment. However, this did not prove to be true.

"I was not considered for employment in some positions, primarily because of my narrow education and lack of committee and student activities. I know that the General Electric Company would not consider me as a student to go back to Schenectady. Westinghouse did offer me an opportunity to go back in their training course. However, because of financial circumstances at home, the necessity of supporting myself and a grandmother who had raised me from infancy, I could not afford to accept the position because of the low pay.

"THAT summer, I worked doing a laborer's work throughout the vacation period and the next fall I returned to the University as an instructor in General Engineering. You can be sure that some of the egotism that I had formerly acquired was rapidly leaving me at this stage. That winter, a position was offered me as an Engineer in the state regulatory commission, having the responsibility of regulating utilities. I accepted the position and this was the best move that I ever made.

"Here, I was thrown against new problems. The extreme technical work that I had formerly apparently been cut out for had to be laid aside and I had to engage in problems of management, accounting, and engineering on a broad scale.

"For the first time I was thrown into contact with executives of corporations and had to learn how other people lived and got along together. Here it was, too, that I began a broadening of my background and interests. Thus at the age of 27, I began to get an education in the broad sense of the word. I had to learn how to handle people, had to learn how to make reports that were acceptable to the public. I even had to learn how to deal with a politically minded public and mingle with politicians.

"In a few years I had attained the position of Assistant Chief Engineer and was responsible for all of the special utility investigations, valuations, and accounting and engineering studies. From here in 1933, I entered the employment of the Washington Water Power Company as Rate Engineer in order to break away from public employment.

"This change brought me again into a more or less frustrated position. I was now one of some 1,500 employes. I was an outsider; that is a great deal of my experience had been gained outside of the company, while most of those with whom I worked had 'grown up' with the company. Again, human relationship problems had to be solved. Here, more than ever, I felt a deficiency because of my early introvert experiences and

(*Continued on page* 32)

The Panel . . .

W. L. Thrailkill, P.E.

Walter Evans, P.E.

E. A. Holbrook, P.E.

Unity Group

(*Continued from page* 27)

of membership, for example, to all voting members of the constituent societies. As an alternative, members meeting the qualification for Junior Membership in the founder societies (in A.I.E.E. the corresponding grade is Associate Membership) or higher grades would be eligible. This would give a base of eligible members of approximately 200,000 (without correction for duplications).

"3. Voluntary Membership — High Professional Standards

In this form of membership, members of the constituent societies in grades of membership requiring a high degree of professional competence and more than five or 10 years' engineering experience would be eligible. This would correspond, in general, to the grade of Member in the founder societies. About 100,000 engineers would be eligible.

"In the discussion of this matter in the Exploratory Group, it is agreed that whether or not there is a later provision for individual membership, the constituent societies should initially control the operations of the unity organization.

"The advantages of provision for individual membership in the unity organization suggested by some members of the Exploratory Group include the following:

"1. It would enlist maximum personal interest of the engineers in the activities of the unity organization.

"2. Membership by individuals would provide a mark of professional recognition which should be a strong element in furthering the unity of the profession. This is particularly true with the type of membership indicated in Paragraph 3 above, and progressively less with the types of membership of Paragraph 2 and Paragraph 1, respectively.

"3. It provides a stable basis for the support of the unity organization without burdening the national engineering societies.

"The disadvantages of provision for individual members which are suggested by some members of the Exploratory Group include the following:

"1. The possibility that the individual members as such would demand a voice in the government of the unity organization and that this might in the long run tend toward a reduction in the control of the organization by the constituent societies.

"2. The possibility that the greater facility of raising financial support, represented by the individual dues, may result in a larger program of activities of the unity organization than otherwise and that this may react to the disadvantage of the constituent societies.

"The form of organization which would result from having complete control in the hands of the constituent organizations and major financial support coming from voluntary dues-paying individual members is not novel but has been used with success by others. An example of this form of organization is the American Association for the Advancement of Science which was formed more than 100 years ago. This Association consists of 218 affiliated or associated scientific organizations (including several engineering societies and about 45,000 individual members). Ninety per cent of the members of the governing body are elected or appointed by the affiliated societies. The financial support of the Association comes almost wholly from the individual members."

American Engineer Reports On First Survey Next Month

Next month comes the event that you've been waiting for! A partial text of the first of a series of Executive Research Surveys conducted by NSPE's Public Relations program will be published in *The American Engineer*.

The first survey is entitled: *"How to Improve Engineering-Management Communications."*

The survey has attracted the attention of leading educators, government officials, and technical magazine editors. NSPE's Conference Board for Industry sincerely hopes that this study will point the way toward even better understanding and cooperation between engineers and management.

AE Wants to Cover Your Chapter Activities

***The American Engineer* would like to carry news of *your* chapter's activities in its pages. But "covering" 300 chapters all over the nation is a big job and we need your help to do it. Has your chapter put *The American Engineer* on its mailing list to receive copies of its newsletter, announcements, and reports of its meetings?**

If not, why don't *you* bring it up at your next chapter meeting and make sure that we know what your chapter is doing and can write it up. Thanks.

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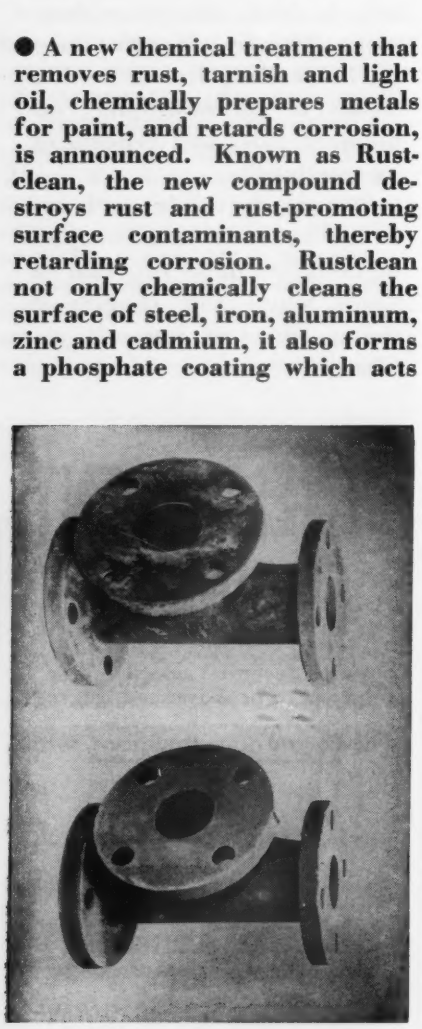
What's New

As a service to our readers, this column will describe briefly new product developments of general interest to professional engineers. For further information concerning these products, we will appreciate your filling in the coupon provided for this purpose, and mailing it to the American Engineer.

● A new chemical treatment that removes rust, tarnish and light oil, chemically prepares metals for paint, and retards corrosion, is announced. Known as Rustclean, the new compound destroys rust and rust-promoting surface contaminants, thereby retarding corrosion. Rustclean not only chemically cleans the surface of steel, iron, aluminum, zinc and cadmium, it also forms a phosphate coating which acts



as a base for organic finishes. Rustclean is also an effective tarnish remover for copper and its alloys.

Corrosion is not limited to metal processing plants. Some Rustclean applications not in the metal fabricating field include maintenance of storage tanks, machinery, steel partitions and stairwells, large architectural pieces, petroleum equipment and pipelines. ***Item one.***

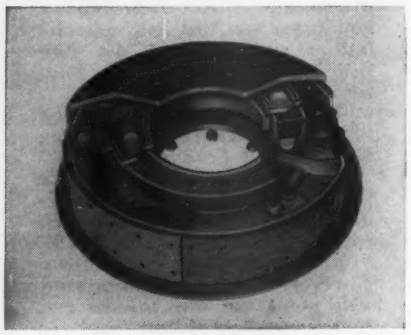
● The Building Officials Conference of America has announced its code approval of Cofar, a reinforced concrete construction material. Also announced was approval of Cofar by the Uniform Building Code of the Pacific Building Officials Conference.

Code approval by these two organizations amounts to approval of the material in construction in cities across the country. More than 50 cities now use the basic building code of the Building Officials Conference to govern construction and dozens of other towns and cities model local municipal building laws on the Conference code. Numerous West Coast localities use the Pacific Building Officials Conference code.

Cofar is a prefabricated combined form and reinforcing unit fabricated from cold-rolled tough-temper steel. It provides a one-stage operation system for placing positive reinforcement and for forming concrete on either steel or concrete frame construction. ***Item two.***

● A new large size electric brake, suitable for heavy industrial use, has recently been developed.

Many heavy equipment users are expected to convert to the new type brake, particularly those in the construction industry, oil fields, steel mills, lumber factories, and larger type machine tools. The manufacturer



says that the new large brake will make it possible for many industries to convert to electrical "stop and start" equipment, where formerly only mechanical and hydraulic systems were used.

The brake, measuring 15 inches in diameter and 5 inches in width, is the most powerful electric brake thus far developed by the company for use on industrial machinery. ***Item three.***

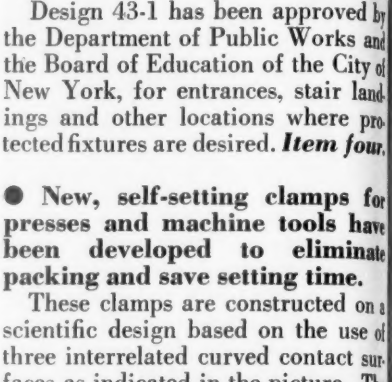
● The new Vaportight Bracket, used to protect electric lamps, has been placed on the market.

The wall plate is 5″ wide, covers any type of outlet box and any irregularities such as open spaces, plaster or broken tile around the outlet box.

Design 43-1 has been approved by the Department of Public Works and the Board of Education of the City of New York, for entrances, stair landings and other locations where protected fixtures are desired. ***Item four.***

● New, self-setting clamps for presses and machine tools have been developed to eliminate packing and save setting time.

These clamps are constructed on a scientific design based on the use of three interrelated curved contact surfaces as indicated in the picture. The



new design allows each clamp a gripping capacity for a wide range to accommodate various thicknesses of bolsters.

The elimination of packing at one end—which is the normal requirement in the old type of clamps—plus the solid gripping ensures against the danger of any tool slipping from the position in which it is held. As a result of this solid gripping capacity, an Autoset clamp with a 5/8″ diameter bolt will hold as safely as a 3/4″ diameter bolt on the old type of clamps. These new clamps have been evolved to meet the requirements of any normal clamping on power and hand presses, lathes, drills, milling machines, shapers, planers, grinders, etc. ***Item five.***

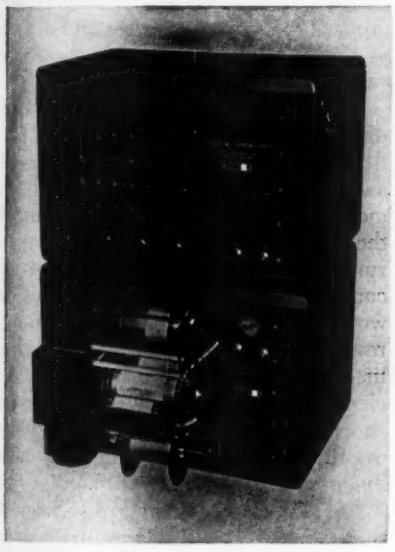
● A new floor patching material called Permamix is now ready for distribution. It is a product of laboratory research and development, tested and proven over a three year period under actual plant and floor maintenance service conditions.

Permamix can be used on any present type flooring, it is ready for instant use, indoors or out, just as it comes from the container. There is nothing to add, nothing to mix, it

will not freeze, it can be stored indefinitely and used in any temperature. It sets instantly, traffic can be resumed immediately, there are no costly shut downs or delays waiting for it to set. There is no danger of temperature damage to the patched area. It comes in handy, durable 50 lb. net weight drums. ***Item six.***

● A unique combination of equipment, recently developed, completes and automatically records a rapid series of measurements such as individual velocities in a machine gun burst. Data in digital form is transferred by a direct process to electrically sensitive paper, conveniently visible for study.

This Recording Counter-Chronograph totalizes elapsed time in steps of ten microseconds or less. The completed measurement is recorded on a continuous roll of Teledeltos paper by means of a bank of stylii. Each stylus corresponds to a lamp in the famous Potter 1-2-4-8 readout. The black traces left on the paper when appropriate stylii are energized momentarily are read in the same manner as the readout lamps.



As many as 150 measurements per second can be recorded with a capacity of six digits for each. With fewer digits, certain stylii may be used for timing or other reference points. The 500′ paper rolls may be driven at any rate from 2½″ to 20″ per second, registering a well-defined dot at low speed which becomes elongated as the rate of travel increases. The paper is indexed intermittently after each measurement is recorded, merging into a continuous drive when the recording rate exceeds twenty per second.

The Recording Counter-Chronograph is intended to meet requirements existing in the fields of ballistics, frequency-measurement, telemetering, geophysical measurements, aerodynamics and wherever microsecond precision is demanded.

By modification, the Teledeltos Recorder may be coupled as an accessory to any Potter Instrument electronic counter, scaler, chronograph or frequency-time counter to provide the same digital capacity and recording rate. ***Item seven.***

● A series of approved portable branch circuit extensions that roll power, light, or heat to any location in industrial maintenance work, on temporary assembly lines, on construction jobs, or in underground construction and repairs have been announced. Known as the NE Rolla-Duct series, (see cut), the devices, which are collapsible, are so fully portable that they may be carried on public utility service trucks. The series include a power and light unit, a strip of flood lighting and a strip of infra-red heating units.

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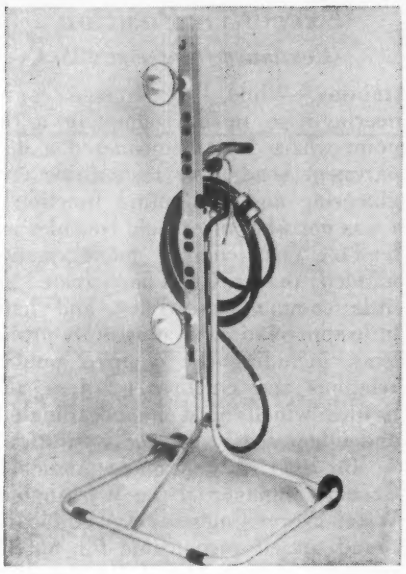

all-steel tubular carriage. The unit's wheels are made of special materials that are non-conductive, and which resist chemicals, moisture and oil, and are especially rugged to withstand years of wear. ***Item eight.***

● Now on the market are Wedglok safety connecting links. Tensile strength of the Wedglok links exceeds published strength of comparable alloy chain, it is claimed. The Wedglok spacer is in compression when the link is carrying a load, and it will not shear or loosen if the projecting spacer points are properly peened. *Item nine.*

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Executive Position

(*Continued from page 28*)

training. While I progressed engineering-wise in the company to a point where I was considered a department head, over responsible engineering and accounting functions, I was not what one would consider as being particularly management-minded; that is, I had participated in little community activity, and had little appreciation of community problems, including the complex public relations and employe relations activities which must be coordinated and integrated in a large institution.

"In 1944, I was made Assistant General Manager of the Washington Water Power Company and suddenly found myself responsible for public relations activities and for employment and employe practices and employe relations activities. In addition, I was in charge of sales and accounting, as well as the problems incident to regulation and the legal aspects of a corporation. Here is where my introvert characteristics caught up with me and I had to do something about it. In meeting people, they would ask —'Well, where have you been all of these years? We have never heard of you in the company.' Men of distinction in the area we serve were surprised to find me appointed as an Assistant General Manager when they had never heard of me before. You can be sure I knew I had to do something about my introvert characteristics then, and I pledged that I would, and I did.

"I BECAME a 'joiner.' I took up community service work. I tried to do, within the time I had, everything possible for other people and for the community. That did the trick. It has been a long struggle, but it has been worth it. Lots of extra hours were put in. The day never ended. One could not hold an executive position for long without doing it. I have the satisfaction now in knowing that I am no longer an unknown quantity in the community life. That, I consider as my greatest accomplishment.

"Based on my own experience, I say there is no better way of developing leadership ability than through the experience that can be gained by accepting a chairmanship, a vice presidency. a presidency, or a board chairmanship, in community activity work, service club work, technical association work, youth activity projects, and similar civic enterprises. The joining of a toastmasters club will develop speaking ability where it is deficient. There is no excuse these days for an engineer graduate who seeks to make his way to the top, to not obtain the leadership training that can be afforded by these community activities.

"Engineers as individuals and as groups often lead narrow lives which offer little opportunity for executive development. One is never too old to learn. Just this summer, I took a month out of a busy life to go back to the University of Michigan to take an Executive Development Training Program course offered by that institution for utility executives for the first time. It was a hard, grueling grind to go through but the broadening experience was worth a great deal. Crammed into this one month's educational experience were the highlights of a four-year course in business administration. To an engineer, this was an illuminating and very valuable experience.

"It is often said, if you want to get something done, get a busy man to do it. It seems that the more activities one is in, the more opportunities come to one to take on greater responsibilities. I feel that I am living proof that a technically minded engineer can develop extrovert qualities if he will set about to do the job. At the moment, I hold several positions of leadership in service and civic activities and clubs. I am sufficiently occupied so that it has been necessary to turn down several requests for service, pending completion of present assignments. While these activities take a great deal of time from home life, they are a part of an executive's responsibility to his company and community and certainly offer great opportunity for personal development.

"To young engineers attending college, I say — 'Don't wait until you are older to get experiences that will teach how to live with other people, how to help other people. Be active. Be a leader in school activities; not to the detriment of reasonably good grades, but don't strive to be an 'A' student and forsake all other forms of training and education. Get a broader education and you will progress faster to the top.'

Ohio Society of Professional Engineers—Annual Meeting. March 13, 14 and 15. Statler Hotel, Cleveland.

National Society of Professional Engineers—State Presidents' Conference. March 14 and 15. Statler Hotel, Cleveland, Ohio.

Illinois Society of Professional Engineers—Annual Meeting. April 3, 4. Pere Marquette Hotel, Peoria.

New Jersey Society of Professional Engineers—Annual Meeting. April 24, 25, 26. Essex House, Newark.

Michigan Society of Professional Engineers—Annual Meeting. April 18, 19. Hotel Hayes, Jackson, Michigan.

OUR final expert, E. A. Holbrook, 1941-42 President of NSPE and former Assistant Director of the U. S. Bureau of Mines, has this to say on the subject of training engineers to become executives:

"In my old age and retirement, I sometimes think that a man 'ought to be born that way'! What I mean is that most engineers graduating from a standard college, take about the same course. Some very bright boys are technically minded and are contented to make progress as technical engineers. They are indispensable and should be encouraged to continue for as long as they live and work. They are the life blood of our profession.

"Others, like myself, discover the other fellow is a better technical engineer than he is, but has the bright idea that he knows enough to keep the other fellow from fooling him, and devotes his energies to getting the others to working together and acting as their coordinator. Pretty soon you call this fellow an 'executive.'

"Well, since 1920, when I became the assistant director of the U. S. Bureau of Mines, I have been classed as an 'executive.' The job has been mostly 'trouble.' Taking kinks out of the organization; getting money to run on; the distress of firing an incompetent engineer who could not or would not fit into the organization; rewarding those who 'played ball'; listening to those with a real or fancied grievance; alibiing for your own shortcomings; trying to keep your organization together; getting new business and going ahead.

"Say, these Engineering Schools that try to teach this executive management stuff to twenty-year embryo engineers are the bunk! Boys will not use it for twenty years after they have forgotten it. A good four-year engineering foundation for a boy is the work of engineering schools—then turn him loose; if by nature and inclination he is of the executive managerial type, he will turn up that way after twenty years or so. If he is of the technical type, all the college training in executive work will not help him.

"Why spoil a perfectly good technical engineer to try to make him a third-rate executive!" END.

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EDITORIALS

Second Questionnaire Needs Your Backing . . .

When NSPE was soliciting funds from its members to carry on a public relations program some time back, its members responded in an unprecedented fashion with a very high percentage contributing.

Professional Public Relations men engaged to assist with the project were frankly amazed at the *esprit* of the Society. They had never, they said, seen anything to compare with it in like organizations.

The first questionnaire, "How to Improve Engineering-Management Communications," received a great send-off from the membership in terms of interest. The second, "How to Improve the Utilization of Engineering Manpower," must do as well.

The first Executive Research Survey found a great many NSPE members who were interested in participating and in sending the questionnaire to executives in their companies. As a result, a very comprehensive sample, covering over 350 large, medium and small companies, was obtained. This material has been developed into a report approved by the Engineers' Conference Board for Industry, and it will soon be off the presses and ready for distribution.

The coupon below is printed in The AMERICAN ENGINEER, to urge members to participate in receiving the second questionnaire, either to fill it out themselves if appropriate, or to be passed on to the "boss" in their companies.

Remember, the Public Relations program, to be successful, needs the continuing interest and time of NSPE members, as well as support in the form of money! How about asking for the Second Questionnaire today?

State Presidents' Conference . . .

Presidents of each of the State Societies of NSPE will be gathering at the Statler Hotel in Cleveland on March 14 and 15 to participate in the annual State Presidents' Conference.

Besides the good-will engendered, these conferences each year provide an opportunity for the administrative heads of the Societies to discuss their common problems, and to adopt ways and means in which these problems have been successfully met in other states. In addition, it gives each an opportunity to learn more about national programs and their implementation at the state and local levels. Questions can be asked of national officers and ideas presented to them for additional development.

This year, the State Presidents will have an opportunity to participate in the annual meeting of NSPE's largest State Society—the Ohio Society—which will be having its annual convention at the same time. Part of the program is planned so that the Presidents can observe some of the Ohio activities.

The Executive Committee of the National Society will be holding its spring meeting preceding the State Presidents' Conference, and it is expected that many of the officers of the National Society will be present to assist in discussions being held during the two-day convocation.

As is usual at these presidential conclaves, the entire gamut of professional activities will be the subject of discussion. Not only will there be discussions on Society administrative problems such as committee activities, membership programs, financing, and the like; but there will also be extensive discussion on matters of import to professional engineers, such as methods of handling legislative liaison, guidance and work with young engineers, and other subjects.

To Join the second PR Research Project—Fill Out this coupon and mail to NSPE!

Important!

Type or *print* on BOTH labels the name and address of the person to whom you want the Questionnaire and later the Report sent.

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